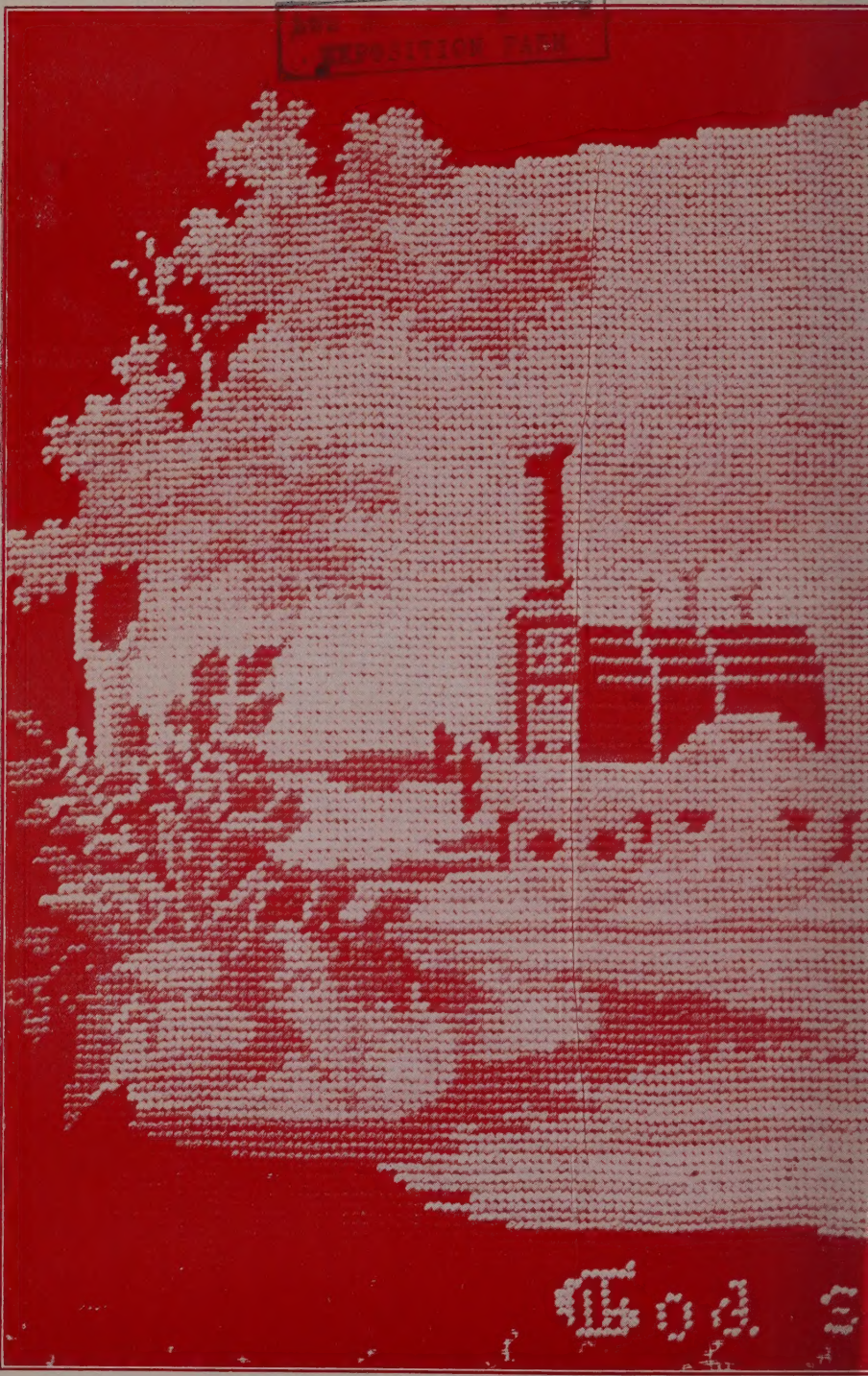
THE ROMANCE OF THE RAILS

AGNES C LAUT

EXPOSITION PARK



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The Romance of the Rails

Books by Agnes C. Laut

The Conquest of Our Western Empire
The Blazed Trail of the Old Frontier
Enchanted Trails of Glacier Park
Through Our Unknown Southwest

During the 'thirties America's pioneers in railroading forged the links in an iron chain stretching between Albany and the Great Lakes. In this picture one of the early trains is shown at Little Falls. The Erie Canal is seen at the right.

The Romance of the Rails

THE STORY OF THE AMERICAN RAILROADS

By

Agnes C. Laut

ILLUSTRATED

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LOS ANGELES MUSEUM
EXPOSITION PARK

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The Romance of the Rails

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Note

For many of the illustrations of this book acknowledgment is made to our railway systems. Modern examples of the " iron horse " could not have been adequately pictured without their friendly coöperation. Though not every one of them has been represented specifically, the material lent by all has been of great service as a guide during the difficult process of selection. If, therefore, certain of the more recent standard types of locomotive are conspicuous by their absence, it is to the fact that they are in daily use that their omission is due. In such a history as " The Romance of the Rails " it has seemed advisable to devote as much space as possible to the lesser known models and scenes of bygone days. In this connection, the Simmons-Boardman Publishing Company has generously allowed the inclusion of an early time-table and plates showing the development of the passenger car. Special thanks are extended to Mr. C. L. Winey for his invaluable assistance. His courtesy has made accessible not only a large number of rare old prints, cartoons, maps and documents, familiar to him as an expert, but several unique items from his own personal collection.

"AND *the Lord went before them by day in a pillar of a cloud, to lead them the way; and by night in a pillar of fire to give them the light; to go by day and night.*" *Exodus 13:21.*

"NEXT *to the Christian religion and the common schools, no other single work enters into the welfare and happiness of the people . . . to the same extent as the railway . . .*" From an address by JAMES J. HILL, a few years before he died.

Foreword

IN trying to tell the story following the four centuries of exploration in North America of that "pillar of cloud by day and pillar of fire by night," which led man in all his wilderness wanderings to a realization as far exceeding his dreams as an astronomer's telescope outreaches the feeble grasp of a baby's hand at the stars, I have been struck by the beauty and the pathos, the ugliness and the bathos, and yet the infinite pity and as infinite glory of it all. Black with sins and blunders, radiant with faith and hope, understanding neither the scope nor destination of the *Thither* to which he was bound nor the *Yon* from which he had come, it is all so pathetically great, so magnificently triumphant that we are forced to ask — What is it for? To go out like a flickering candle quenched in the dark? Hardly! Not that way does or has Nature worked. Here was Man, the weakest, the most helpless, the most naked of all the creatures created in Nature's scale, setting out to climb from slime to stars. Like a child, he fell. He fell often and he fell hard; but like a child, up he rose and went on again — often a little lower than the angels and often a great deal lower than the beasts; and in the brief period of the last century he has achieved more than ever before in six thousand years. He achieved it in spite of the Worst in himself, but always aspiring to to the Best.

We ascribe much of all accomplished in the last

hundred years to our institutions; but every institution is only the enlarged shadow of some Man, or rather the Spirit in the weak physical mechanism called Man.

Of no factor in progress is this truer than of the Steel Rail. From wheel to electric dynamo, each is the device of the Spirit in some Man; and as the story proceeds, if I seem to hitch each mile forward to some individual man's record, it is because each mile gained in the onward march was gained as the result of some man's dream, vision, effort with all its blunders and falls, pauses and crimes, and conquests of the impossible. If I seem to hit some of the sins hard as the story goes on, it is not because of the sin stopping progress. It couldn't. Perhaps we all have to bark our shins on sins and blunders to learn to keep on the racial trail and not revert to wolf; and after all, the sin went under the wheel of progress as it always must. It was not because I wanted to hit the sin that I struck it. It was because the sin seemed to be a sin against cosmic racial advancement, like the poor fools on one line who greased the rails to prove an engine couldn't climb.

In not one case that I know has the crime of legalized theft or concealed burglary benefited the criminal even past his own generation. The wolf that has hamstrung some beautiful horse is presently himself hamstrung and devoured by his fellows, or dropped from the pack to die diseased — an outcast. In one of the great Indian reserves on the Columbia for some few years the herds of horses, cattle and sheep

were raided and hamstrung by a cougar — Rocky Mountain panther — which became a terror to every camp. One night a terrible noise came from the hog pens and chicken coops of the little central town. When men dashed in with clubs and guns they found snarling, backed up in a corner, a huge tawny form lashing and foaming, but powerless to spring; and when they clubbed him to death and brought him out to the light, it was found that he was stone blind and had been starving to death. His stuffed pelt now stands in a hotel corridor to grace a deep moral to an untold life story.

I have always thought the buccaneer era of rails resembled that poor old stone-blind savage beast.

To pretend, or claim, that all the conflicting dates on this or that, all the disputed figures, all the opposing policies in violent collision, are given here with meticulous accuracy would be absurd.

There are no two authorities who agree on many points: and these are minor points; for progress marched swiftly on just the same, leaving the broken heads to watch the tail-light as the pillar of fire advanced through the night.

I have not attempted to tell the story in terms of financial structures. That is only a part of it. Much less have I tried to tell the story of the rail as a sort of glorified schoolboy blaze of a great adventure. That, too, is only part of it. To me the rail is the epic of speed, of space conquered, leading on to another racial epoch, in which we are the actors. The next curtain-rise, the next era — who knows? Will it

witness the binding of all nations in a world unity, as it witnessed the binding of almost fifty little states in one great State?

There it is — a pillar of cloud by day, a pillar of fire by night with its headlight illuminating the way before and its tail-light semaphoring the way open for all behind; and in that way, and that way only, have I tried to tell the story.

A. C. L.

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PART I

Hitching the Kettle to Steam Power

The Romance of the Rails

Chapter I
"Polly Put The Kettle On." 1786–1804

THE hour, two in the morning. Fogs lie thick as gray wool over the forests dank with mist damp. Torchlights of pine faggots, candles stuck in iron holders, lamps ablink in smoky lanterns, begin to glimmer through the white dark round the little taverns with signs of Flying Squirrel, Red Fox, Good Friend, when there bays through the deep woods in the heavy bass of a hound on scent the ram's-horn reveille of "Polly-Put-the-Kettle-On! Polly-Put-the-Kettle-On and We'll All Take Tea!"

Instantly, lights twinkle in all the windows of the little inns; but not glass windows — no, parchment. Doors flying open and shut reveal travelers tumbling from hall and wall berth-beds and attics, dressing as they hurry to lug down baggage in carpetbags and grab as they can huge tankards of hot tea or mulled wines, to be gulped in "post haste," to wash down breakfasts of venison and mush and pancakes served with maple syrup.

No serviettes for polite gentry here. The stage-coach will leave in less than an hour. First come first served; and the impolite gentry used their sleeves and the polite their sheet-sized pocket handkerchiefs.

Outside is a great jingling of bells. Horses with manes decorated with bells and red tassels, tails trussed up in braids and bobs with more tassels, are stamping and snorting out of stables steaming with sweat. Drivers are swearing at one another in quite unexpurgated pioneer dialect, for these rival knights of the whip have just four minutes to harness and hitch, and the " boss " is there timing them, with a watch the size of a small saucer in hand. Those drivers who got away first had best chance not to plunge in mud holes made by passing teams. Passengers first in coaches had best chance for choice place, close up to the driver, out of door draughts. The coaches could carry eighteen people, crammed. They were comfortably packed with nine to twelve. They were easy riding with eight or nine. Baggage strictly limited to fourteen pounds per person was stowed in " the 'possum's belly " — the boot below the slatted floor — or tossed on the roof. In spite of rain, the roof was the safer spot for baggage. Oilcloth could protect overhead. If bogged in a mud hole of slush, or stalled in fording a thaw-swollen stream, the pouch underfoot was apt to take water, and travelers had to fish out bags and hold them high overhead till the waters were passed, though waves might come up in the coach knee-high.

" Polly-Put-the-Kettle-On — Polly-Put-the-Kettle-On — Polly-Put-the-Kettle-On " — the post boys, with chests inflated like frogs, keep booming — booming — booming through the ram's horns. One can see gentlemen in satin breeches and high top-boots and

long cape-coats tumbling with more haste than grace to the back steps of the stagecoaches, followed by ladies in hoops and bustles and veils and wraps aplenty, with hot bricks to warm feet, stowing themselves in stage carriages crowded to twice their capacity. If too crowded, the gentlemen could ride on horseback, which young gallants preferred; but horseback on narrow roads, dripping rain and night mist, often girth deep in mud, was more picturesque than pleasant.

The stage roads followed old Indian trails. Indian trails followed old game trails. Old game trails took no heed of rivers, puddles, twists, turns, overhead brambles that knocked riders' beaver hats to the discard.

Nevertheless, those were "the good old days." The weaklings had to grow courageous and strong, or die; and one combination stage-and-keel-boat line in the Middle West regularly advertised that ladies and gentlemen need have no apprehension of chance shots from raiding Indians, because awnings and shutters of iron were proof against bullets and that pistols would be supplied for self-defense when passengers so requested.

Where the swamps were the worst, corduroy roads bumped the springless wagons over the water line. Where the logs of the corduroy rotted and broke below the heavy Belgian horses, planks surfaced the danger spots; so that President Washington counted himself fortunate to average twenty miles a day, whether he traveled by stagecoach, or horseback.

Still it is not surprising the wise Father of his Country foresaw from the beginning that the overcoming of vast distances was one of the first needs of the young republic, to bind it together.

Fares in the settled sections were not so far different from what they are to-day, three to four and five cents a mile; but in the sparsely settled country they ran to ten cents a mile for a through passenger and twelve and one-half cents for a local. On boats going upstream, the cost was three times that of going downstream. It was seventy-five dollars from the Ohio to New Orleans. It was one hundred twenty-five dollars from New Orleans to the Ohio. Over short distances, the differences were as one to three. In rush periods when stage and river rates combined, it cost as much as three hundred dollars to go from St. Louis to a point in Southern Montana. Then the difficulty was not to get loads going West. There were no " empties " westbound. In one rush year in the sixties, from a point in Kansas to Virginia City, the Montana stage and river combined cost a passenger six hundred dollars for his ticket one way, — time, seventeen days, — baggage limit twenty-five pounds, meals one to two dollars.

Regarding baggage charges and postal rates, the less said the better. Over fourteen pounds the baggage rate ran at six to eight cents a mile. For thirty miles, postage rate for one sheet was six cents, for over four hundred miles twenty-five cents. On double sheets, the rate was doubled, on three sheets tripled. No wonder our grandfathers and grand-

The steamboat as a precursor of the rail was a factor of the greatest importance in providing an efficient means of transportation for a vast and loosely knit young republic. The Indians variously named the steamboat a "Millwalkee," a "Fire Canoe" and a "Walk-on-the-Water."

mothers wrote their love letters on tissue and India paper, first across the paper and then up and down over the first writing.

As to speed, the fastest from New York to the site of modern Buffalo was one hundred hours, with four nights' sleep en route. To travel from Philadelphia to Baltimore in five days was almost perilous; and from Philadelphia to Quebec in seven days was good time — summer on wheels, winter on sleighs. Eight hours and thirty-five minutes was a record from New York to Philadelphia.

With highways so outrageous that neither coach nor sleigh could flounder through, baggage was flung across pack horses tied head to tail in single file. Then, led by a bell mare, the caravan set out, with riders shepherded by a guide till coach travel could again be resumed.

Three o'clock in the morning — with a last blast to wake the dead, the coaches were off at a gallop. Heads joggled. Bodies couldn't. They were packed. Plug hats bounced. Ladies' veils went askew. Drivers cracked their long whips and swore by this and that they would beat So-and-so of a rival stage if they had to spill every passenger in a puddle — which they not infrequently did. Gentlemen swore. Ladies heaved sighs or fell asleep where they sat. The roads ran round sharp corners — what matter? The horses galloped. There were fresh relays every twelve miles — four minutes for the change and the stretch of passengers' cramped limbs. Stumps stuck up in mid-road and if the driver did not swerve his galloping

team — sometimes two teams tandem — the baggage pouch ripped. Fords, there were many; bridges, few; and ferries across the dangerous deep streams aplenty, but tolls high — fifty cents for team, twelve and one-half cents for riders. Stops to change teams were usually at turnpike gates, where tolls were similar to ferries; for ferries and turnpikes were licensed. In rush seasons there was always a great jockeying of the rival coaches to get on the ferry or through the turnpike first; and sometimes drivers got down from their seats and settled disputes with fists. The same fights occurred where rival teams met at narrow spots on the highway. Where night stops compelled taverns, little towns grew up in the woods, with stage men and farm markets and flour mills and stores, just as later the centering of rail traffic created, overnight, cities of a size beyond the grasp of our ancestors' dreams; and each little town had its deeply intrenched "vested interests": horse dealers, tavern keepers, stores, farmers — who had good sale for horses and produce and could always get work in off seasons teaming for the coach lines — turnpike, ferry, and bridge companies.

These old stagecoaches used to cost from three to four hundred dollars, and the horses from sixty-five to a hundred fifty each, which, of course, would have been much more in our currency; and the rough usage was terrific for horses and coaches. Horses had to have much more bone than in England, because American roads were yet roads only by courtesy; coaches had to be lighter, for the heavier type ac-

cumulated too much mud in a soil that was sticky in thaws, and lighter coaches knocked to pieces in a season.

Anyone who suggested better modes of travel could count on being violently opposed by at least sixty per cent of the rural and small urban population. Land values averaged fifty cents to two dollars and fifty cents an acre in the East and one dollar and twenty-five cents in the West. In fact, when one rich farmer brought his herds up to what is now Chicago, and having sold them was going back with the money bags slung across his pack saddle, he was offered in trade for his fine pony the whole site of what is now the Palmer House Block. The offer struck him as a joke. A horse in what is now Wyoming was considered an indifferent trade for a good Thanksgiving turkey; so that a turkey was valued at more than the Palmer House Block. In fact, the whole site of what is to-day the city of Toronto — two hundred thousand acres — was bought from Indians who used it as a portage point, for twenty shillings cash.

What produced the amazing transformation of a continent in a hundred years? What accomplished in America what Asia had not achieved in six thousand years, nor Europe in eighteen hundred years?

Simply steam!

AUTHOR'S NOTE

The descriptions of travel from 1789 to 1828 have been drawn from many journeys of this era — too many to enumerate. They are literally legion, from *Washington Papers* on the East to such early Western travels as Bradbury, Breckenridge, and Nuttall. Students who want to verify figures will find them carefully compiled in two or three compendiums

which cannot be accused of bias. The best of these are: the *History of Transportation* edited by *Meyer* and issued by the Carnegie Institute of Washington, 1917; *Ringwalt's Compendium,* 1888; and William Washington's impartial study of the railroads. Literally hundreds of such authorities could be given, but these are most reliable. They are not, in fact, histories at all. They are the State and Federal records quoted from the time when records were first kept. To these should be added the *I. C. C.* documents and yearly prints. Of these, the voluminous prints and carbon copies of hearings are much more revealing than the necessarily condensed annual reports.

Chapter II

When *Did* "Polly-Put-The-Kettle-On"? 1804–1831

THE story of the conquest of space began centuries before the ram's horn blew its morning signal in the backwoods of America.

It began even before an old Greek scientist of Alexandria, in 200 B.C., discovered that a spouted sphere filled with water would whirl, by some sort of repercussion, as long as fire below the sphere (the first fire-box furnace) kept the water (in the first boiler) spouting steam. Only old Hero didn't think of hitching that spout to a tube and of attaching a movable piston rod inside that tube to be hoisted and let down, and he didn't think of fastening that piston rod to a grasshopper shaft, and of connecting that grasshopper shaft to the hub of a wheel which would be whirled round like the sphere and would drag other wheels behind.

Poor Friar Roger Bacon, sitting imprisoned in his cell at Oxford for uttering such heresy, had predicted: *"Carriages without horses will travel with incredible speed."* Old Hero hadn't worked it out so far ahead. He had the idea all right; but he didn't harness the idea to practical usage. In Ohio in 1828, when a school board was asked for permission to hold a discussion in the schoolhouse as to the use of this new steam power on railroads, it gave a reluctant permission in these historic words: *"You are welcome to use the schoolroom to debate all proper questions; but such things as railroads . . . are impossibilities and rank*

infidelity. There is nothing in the Word of God about them. If God had designed that His intelligent creatures should travel at the frightful speed of 15 miles an hour by steam, He would have foretold it through His holy prophets. It is a device of Satan to lead immortal souls down to Hell." And even Boston warned ominously that the jars of such unholy speed would lead to " concussion of the brain " and undoubtedly end in a race of " speed maniacs." All of which recalls George Stephenson's stolid reply when asked what would happen if in front of his new rail-steam contraption a cow posted herself on the track — " it would be uncommonly awkward for the coo."

The first engines were called " puffing billies," " Hell on wheels," " snorting race horses," " Tom Thumbs," " rockets that were going to go up and come down in sections " like Darius Green, " puffing John Bulls," " devil wagons," " iron horses," " black dragons snorting sparks in the darkness and silence of night disturbing the quiet of rural sleepers and bringing undesirable strangers in our midst." I was on one of the first railroads that crossed the interior of Newfoundland. Farmers almost mobbed the train. It would — they said — kill the stray pigs and run over cows. Newfoundland fishermen had had experience in a banking crash. They found checks were no good on a bankrupt bank; so when train men first tried to check baggage of burlap sacks filled with all an out-harbor man's possessions, the fishermen and their families would have none of those checks. They lugged all their ill-smelling fishy bundles right into

the first-class coaches and defied the powers to eject them. New York State annals tell of an early era — of mobs who tore up tracks and, if the track men had interfered, would have torn the rail hands limb from limb; and the rotten eggs hurled in one section were as sweet-smelling incense compared to " the opprobrious epithets " hurled in local elections.

Mistakes were made — pretty nearly every mistake that could be made by blundering humans feeling forward in the dark. On one Southeastern engine, a negro sat on a steam valve to keep it down and ascended much faster than he anticipated. On another line in the Southeast, a cow on the track did make it " uncommonly awkward " for the directors aboard; for it spilled every mother's son of them head over heels down an embankment with more damage to high hats and dignity than to bones. On another track where a horse-hauled car raced an engine-drawn car, the horse beat the engine. Less than a century ago, rail highways were voted a " public nuisance " in a city of New York State, and a Grand Jury ordered them removed from city limits.

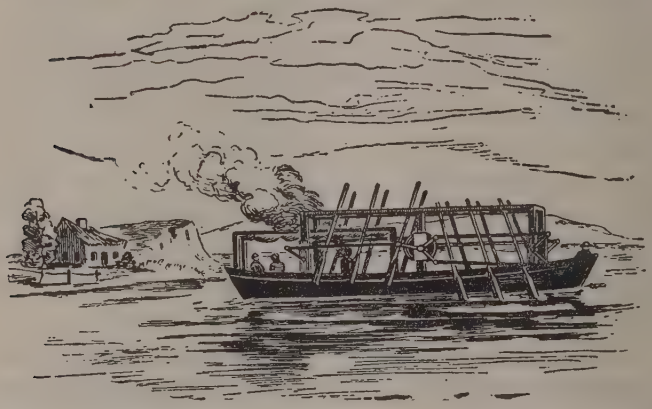
In America, Oliver Evans — a wagon worker's apprentice in 1772 — seems to have been one of the first to grasp the meaning of steam power. He wrote " Open Letters to Congress " and carried his ideas to the greatest engineers of the period, to be told with contempt he had " steam mania " on the brain. He proved, in 1804, that a steam-propelled scow could be worked by wheels on land and by a paddle wheel to rear and only such device could increase the value

of Western lands. "Pah," said the wise wigs, "only the increased population can bear the heavy cost of constructing roads." "Nay," retorted poor Oliver, daft with one idea as poor inventors always are, "such carriage of people and produce will increase population." The big fellows touched their heads and smiled pity. Evans tried to form a company to build a railroad from Philadelphia to New York. Of course, he couldn't raise the money. It was madness. Who had ever done it? "*Nevertheless,*" retorted Evans, "*the time will come when carriages propelled by steam will be in general use traveling at the rate of fifteen miles an hour, or 300 miles a day, as fast as birds can fly. Two sets of railways will be laid . . . and passengers will sleep in these stages.*" Prophetic, wasn't it? Yet he was regarded as "steam mad."

As early as 1796, John Fitch, a peddler of medicinal roots from the Ohio, had a steam yawl ship that would work, and he demonstrated the fact on the Delaware; but when Congress was asked to help him, the peddler was allowed to cool his heels and his ardor in waiting. He went back to Kentucky and drank himself to death. If Evans and Fitch had dared to predict sixty miles an hour, they would probably have been sent to an asylum. "Till we have lines of brass, preposterous to talk of traveling fifty or sixty miles an hour." That was the verdict of the greatest engineer in Europe.

Up in Quincy, Massachusetts, in 1826, a train road like a modern coal mine dump was in use to convey

blocks of stone from a quarry for the Bunker Hill monument. The horses pulled it uphill, and the weight of gravity drew it down; and the horses rode downhill with the load. It was just the simple gravity road one sees in coal mines and lumber camps to-day with improved devices — double tracks, chains and cables on pulleys, the loaded dump wagon scooting



John Fitch, one of America's pioneers in steam navigation, built a steamboat which conveyed passengers for hire on the Delaware in the summer of 1790.

downhill of its own weight carrying the empties. A similar road was in use in Pennsylvania in 1827, and about the same period out from Carbondale, for the Lackawanna coal fields.

Yet no one seemed to foresee that, if a rail dump car could work by gravity, then with steam as the pull or the push a railway, whether of iron or wood, ought to work on the level.

The Delaware and Hudson Canal Company had

sent their engineer, Mr. Allen, to England to get locomotives, which were being tested and found successful. A Pennsylvania Society in 1825 had also sent an engineer, Mr. Strickland, to gather facts in Europe; and the reports of these two engineers did a great deal to blow the dead weight of prejudice off heads in America. Why did such prejudice need to be blown off? Chiefly, the pocket nerve. The new Republic was desperately poor. It couldn't afford to make mistakes; so like all nervous leaders of progress, it at once began to make as many mistakes as possible. Keen old New York, ever with an eye to advantage — which had had a charter for a railroad in December, 1825 — had to contract with the printer in the advertisement for the charter that if the charter "succeeds, bill for advertising one dollar and fifty-six cents; if it does not succeed — nothing"; and Stephen Van Rensselaer, one of its richest backers at Albany, distinguished himself by "backing out" because the city of Albany would be "ruined" if a railway diverted travel and traffic to Manhattan.

In 1705, Newcomen, a blacksmith of Dartmouth, England, devised a contraption to pump water from flooded mines by steam. It was just the old trick — plug a kettle spout and the lid lifts. Newcomen had a beam like a balance. The steam forced one leg of the beam up. The other leg of the beam went down. When the steam got relief, the first beam dipped down, the other beam tipped up and hoisted the water. The water was poured out — then up bubbled the

steam end of the beam again; and the motion lasted long as the fire box below the kettle (boiler) kept the water spouting steam. That was all. It sounds simple, but the invention fell flat until James Watt, a Glasgow mathematical maker of instruments, caught another idea. He was asked to repair one of Newcomen's machines nearly fifty years after Newcomen's death in 1720. He saw that a piston rod forced up and down by steam might be hitched to a grasshopper leg, and that leg hitched to the hub of a wheel might run little mills, trucks, yes, — perhaps factories. Came Dick Trevithick to work out steam under high pressure. (Terrifying — his critics said — it would blow up. That is what he wanted it to do — blow up; but blow up under control valves and things.) When he added to that a wheel with flanged edges to hold it on iron rails — the modern railroad was pretty nearly a thing perfected — pretty nearly, but not quite. The designer had to prove his plan would work. Better try it on water first where there wouldn't be curves, and up grades, and down grades, and road beds, and slippery rails which the wheels would certainly jump, and cows to get on the track and — and — a dozen imaginary lions in the way, which John Bunyan had long ago proved are only the shadowy demons of our own fears.

The very year poor Evans in America had built his scow with wheels for land and paddle wheel to rear for water and a boiler amidships to pump the wheels with a grasshopper leg, Trevithick did build a rail engine for land. That was in 1804 — the year Lewis

OLIVER EVANS.

Oliver Evans, a wagon worker's apprentice in 1772, was one of the first American inventors to grasp the meaning of steam power. He predicted that carriages propelled by steam would travel at the rate of fifteen miles an hour.

and Clark began a three-year traverse across an area which steam now crosses in five days, and gasoline in an aeroplane in two to three.

It was George Stephenson who took steam out of

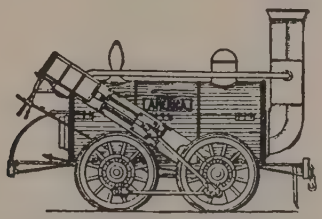
the realm of bootless, fruitless discussion, and put it — as we would say — on the screen of life.

Stephenson came on the scene ten years later than Trevithick, the Cornish miner. He was born in 1781. He inherited all that had been pioneered before him. He was most fortunately not a wise wig. He was a practical fireman, brakeman, engineer in Newcastle mines before he was twenty-one. The deeper mines go, the higher the cost. With coal, increased costs may limit sales to what buyers can afford; and if you pay low wages to lower costs to buyers, your workman may be reduced to wages too low to live. Stephenson was a coal miner; but he was also a mechanic. He knew exactly how that jig saw worked havoc at both ends. So he worked out an engine for a coal tramway, in 1814, that drew eight wagons big as itself at four miles an hour each trip.

Other inventions doubled the speed of his engine. He got speed up so he could hope for thirty miles an hour. Stephenson now became engineer for the Stockton and Darlington line, and his company authorized him to try out his inventions; but so doubtful were they of his success that they put in the contract of 1821 by haul "with men or horses or *otherwise*." That "*otherwise*" gave Stephenson his chance. He worked away until September 27, 1825, "the most famous day in rail history," when he invited the public to come and see. What it saw was an engine driven by Stephenson, helped by his brother James. A tender came next with water and coal. Six trucks next, loaded

with coal and a few courageous passengers on top of the coal. One truck had flour barrels with timorous passengers ready to jump. A group of sceptical engineers came on the next wagon. Directors in great dignity but with hearts in their mouths next. Then six wagons with fools so rash they didn't know the risk. Then fourteen wagons with a promiscuous lot of miners ready to jump.

The train weighed the colossal total of nearly ninety tons — as much as forty teams. It attained



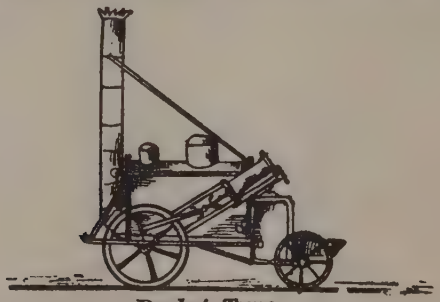
MODEL OF FIRST ENGLISH LOCOMOTIVE IMPORTED IN 1829.

The perfection of the horizontal boiler was of paramount importance in the development of the locomotive. This crude English model shows one of the early attempts to solve the problem.

eight miles an hour. England went "steam mad," though a horseman rode ahead at frantic speed on the track "to shoo" all people and animals out of the way. A frantic yelling rider was the first railway signal. If you look at the picture of the first train, it is almost like a boy's plaything. You can see the grasshopper shaft, the chain connecting fore and hind wheels, the rude couplings, the smokestack like a small chimney; the little dump cars; but it isn't quite as crude as one of the first trains in America where

the couplings let the dump wagon behind telescope the car ahead so often that the train had to be stopped, a rail fence split, and the quarter lengths tied to the couplings to keep each hind car from bumping its neighbor off the track.

So Stephenson's first " Locomotion " was followed by a greatly improved " Rocket " that ran twenty-nine and a half miles an hour. No need to convince the sceptical now. People threw their hats in the air.



Rocket Type.

This early American engine was built on the same lines as Stephenson's famous *Rocket* that ran twenty-nine and a half miles an hour.

Country folk came great distances and camped in the fields to see the train pass, and when the train had passed they often found themselves and all their former ideas and prejudices spilled helter-skelter on the ground; for the horses took fright and the drivers were so intent on the passing spectacle they awakened to find themselves coming down with the impact of a spank and the horses on a wild stampede towards the horizon.

All these reports the American engineers, Allen

and Strickland, now brought back to the United States.

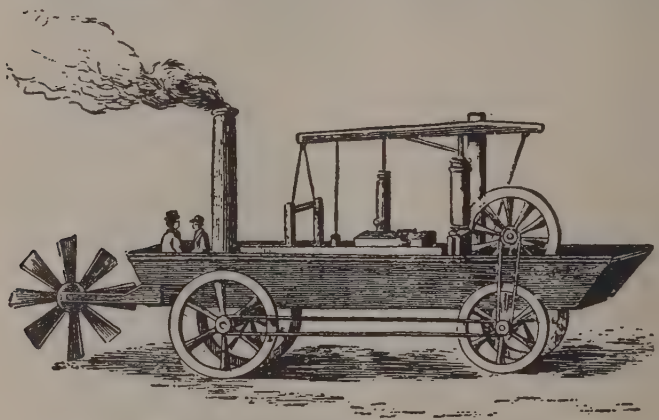
The ram's horns of the old post roads with all their glamour of adventure passed for a new glamour that was to span the world.

Now take a glance back to the general conditions of the New Republic when it began its great century of rail construction. If it does not, it ought to increase your respect for the dauntless spirits that essayed what seemed to be the impossible. The original colonies had emerged triumphant from the Revolutionary War and the War of 1812. They were sky-high in hope and confidence, but desperately short on cash. The population numbered less than half the people of what were known as the Netherlands. From being a doubtful experiment in democracy, they had become a power to be reckoned with by every nation in Europe. From beginning a narrow strip along the Atlantic, the New Republic now reached from the Gulf of Mexico to the Canadian Border, and from the Atlantic Seaboard to Oregon yet held in " joint occupation " but with, as all diplomats knew, sound title to the Straits of San Juan de Fuca; but — there was the rub — how to bind this vast domain in a unity? The answer to that question — was transportation; and now steam came in the picture.

Chapter III

The Mill That Walked On The Water
1800–1830

WHEN poor Evans rigged up his little contraption with a paddle wheel behind to kick like a boy swimming, and four wheels below to run on land, and a "puffing Billie" snorting sparks and smoke in the middle, he was not



OLIVER EVANS'S STEAMBOAT AND WAGON

Eructor Amphibolis, 1804

One of the strangest early steam-driven contrivances was this fantastic mechanical amphibian which "kicked" its way ahead on both land and water.

the first to dream of contrivances that would "walk on the water." Fitch, the peddler, had preceded him by twenty years.

For nearly five thousand years, rivers had been the Main Streets of commerce. Nineveh and Babylon grew to be hubs in the wheels of traffic because they

occupied strategic positions on great rivers. Tyre, with her purple sails and silver-plated, fish-shaped prows with ivory banks for rowers, grew to be the center of opulence in the East because she had carriers that would walk on the water. Egypt became rich because she had a Nile for a water road. How long it had taken men to develop inventions from log raft to dugout and their skin coracle and birch or hickory canoe, we do not know. Anyway, at that point among primitives there was a dead stop. The many sails of four-masted wind-jammers above decks, and banks of three-tiered slave rowers below decks, with oars in long sweeps fifty-three feet out, came later with the civilization of Egypt and Greece and Rome and Spain and England.

As far as America was concerned, progress stopped dead with canoe and blanket sail. It was only when the white pioneer came with axe and saw that rafts were rigged up houseboat fashion, thirty to forty feet long at a cost of forty to fifty dollars home-made, and ten dollars extra for cables to warp round trees on the bank. Then long migrations were attempted downstream afloat with the current. Because it offered the longest unbroken float downstream, the Ohio chiefly became the path of the great migration west. Inasmuch as the law of life is motion, there is much here to explain why the flag of progress in the East lowered and the ensign of advance rose above the ever-marching frontier in the West. It was the Lure of the West that forced the building of rails in America. The trouble in America was that, even with

the keel-boat raft to float down with the current, the cost to send wheat out to market was three times the price of the wheat to the grower.

When men were debating steam to cross the Atlantic, a learned scientific doctor in England stood up wide awake and sober and cocksure in the profundity of his ignorance and pronounced verdict: "*a voyage from Liverpool to New York*" *by steam* "*is as im-*

The triumph of steam was complete when the *Savannah*, the first steamship to cross the Atlantic, made its pioneer voyage in June, 1819. The trip took twenty-nine days and eleven hours.

possible as a flight to the moon." When the Savannah with side-paddle wheels driven by steam and sails in case steam failed — ninety-nine feet long, three hundred fifty tons — did cross the Atlantic in June, 1819, and was mistaken by watchers ashore for a sloop on fire, her owners advertised the day of leaving but did not dare venture the day of arriving, which was twenty-nine days and eleven hours afterwards. She

had thirty-two staterooms for passengers; but not a single soul would risk life by going as passenger. If you sometimes doubt whether we are progressing or slipping back, compare that to a passenger liner a hundred years later, one nearly eight hundred feet long, eighty-eight beam, sixty deep, thirty-six draft, with fifty cooks, three hundred stewards and helpers, eight decks, a crew of nine hundred, berths for two thousand to three thousand passengers, fuel enough to fill twenty trains of thirty cars with coal, bands, orchestras, daily news and radio bulletins, and more meat and cereals on board for five days' passage than a hundred-sixty-acre farm could supply. If you want to emphasize the comparison in little things: in " the good old days " the only lamps were candles, the only heat foot bricks for passengers; and hard salt sea biscuits with soup was considered best fare for steerage passengers.

Rivers might be highways; but they would not run uphill; and America's hills were mountains. Her portages were ascents and descents of from two thousand feet in the East to ten thousand in the West.

There were as yet no canals. Besides, canals froze over.

There were as yet no locks to dam waters in canals and lift and let down ships.

Faith might remove mountains. There were as yet no tunnels to do the job.

Europe's rivers were as shallow ditches compared to America's five great water highways: the Hudson, the Ohio, the Mississippi, the Missouri — which was

really " a spiral stairway from the mountains to the sea," forty-two hundred miles long, the longest water highway in the world — and the Columbia, which was a mountain flood, not in the coils of a python like the Missouri, but in the deep canyons and dizzy falls of a dozen Niagaras.

Of bridges, except planks, there were almost none.

Yet the pioneers kept moving westward with the faith of little children, or fools.

If you ask why the South with the very best blood of Saxon forebears moved westward slower than the Middle East, the answer is to be found in four significant " S's " — the sloop, the slave, the swamp, the swiftness of the short rivers to the sea. Cotton and tobacco were the great crops. The most of the planters could build their own little sloops and send them down to the sailing vessels on tidewater. When goods came back from Europe, there was the slave. By tying horses or mules head to tail, provisions could be packed in with cheap slave labor to run abreast under a foreman and ascend the streams by bridle trail ashore. Drainage of swamps was not even contemplated. Though the rivers were placid through the plantations, as they approached gaps in the mountains westward they were terribly swift and shallow.

It was the daredevil fur trader who attempted the impossible of circumventing river navigation up and down stream first. By the time Lewis and Clark were ascending the Missouri, he had perfected his own rude contrivance for immediate needs.

To the canoe, chiefly for the Great Lakes, where

canoes swamped in cross waves, he had added the mackinaw boat, made of wide planks and wooden pins, flat-bottomed, cross-timbered, fifty to ninety feet long, sharp at prow, sometimes square at stern, three to five feet deep, with water-tight compartments. The cargo came three to four feet above gunwales, and was made fast with ropes through cleats under oilskin covering. The steersman stood at the stern with a long pole and a vocabulary to drive men to drink or death, to both of which they frequently went headlong. The oarsmen used pole, paddle, sail, as occasion warranted; and when they were bouncing downstream where the high water carried over sand bar and rapid, tied a tree as a rudder balance sweep to rear, erected blankets as sails and sang, at the top of their lungs, river songs which are chanted in habitant French to this day.

The hours were twenty-four a day. The pay from one hundred twenty dollars to four hundred dollars a year with "grub" of pork, rum, biscuits, soup, and what game they could shoot when they tied up at night. The pace was ninety to one hundred fifty miles downstream, forty to fifty up. A mackinaw seldom lasted more than its one trip when it was broken up and sold for lumber, and the crew set to work building another craft for the return journey.

The keel-boat was pretty nearly an ark. It might be ninety feet long and twenty broad and draw thirty inches. Its cargo box ran the length of the deck but not often higher than five feet. Its cable was one thousand feet long, fastened to the top of mast or to

one of the midship thwarts; for, fastened to the prow in a storm, it would have twisted the ship across the wave wash. This was primarily the craft for up-river work, and desperately hard work it was. Where there were no snags alongshore, the lower line could be used. Where floating trees and brushwood would have entangled the cable, the rope from the mast head was used. Such a craft was suitable only for river travel over plains. Forty men got out and pulled or cordelled or warped the craft upstream. Oars, poles, paddles, sails, all helped upstream. The mast might carry a hundred square feet of canvas; but that was dangerous on the Missouri where hot winds came in hurricane blasts on the river, sometimes wrecking the boat or hurling her cargo house to splinters in a tornado. Like a deer scenting the wind with a moist nose, the boss steersman at night would hold up wet forefinger and feel the wind. He would scan the western signs. A sun like a bloody shield in the dust of the prairie, or a moon rising red in the dusk, with an angry ramp to the bursts of wind and perhaps sheet lightning in flames afar — boded no good to Missouri boats. The captain would tie up for the night under shelter of the west bank — the highest bank he could find; but that was not always safe. In hurricane rains — called in the vernacular " horned breezes " — the soft bank might cave and slide, or the treacherous floods jump their bed; and farmers along the Missouri have found embedded in their fields ten miles from the river boards with names of old Missouri craft lost in some hurricane storm or flood, which had

swept a wreck far over fields and buried the crew no man knew where. Of river craft on the Missouri it is rather terrible to record that for almost half a century forty per cent was regarded as light loss for a year. In years when floods hurled floating logs in snags on unseen sand bars as many as seventy per cent of the river ships were lost. What became of the crews? Who knows.

Then there came a day — it was an unbelievable day in Indian legend — it was midsummer 1818 on Lake Erie, about 1830–31 on the Missouri — when the Indians heard the deep bay of what was neither hunter nor hunted, and looked across the water to see — a great canoe, a house without sails, without paddles, on fire, walking the waters. They fled in terror and called the whole camp to come and see. What was it? It was a great canoe on fire. Yet it didn't burn. It walked on the water. They called it "a Millwalkee" on Lake Michigan; "Walk-on-the-Water" on Lake Erie, and "a Fire Canoe" on the rivers of the West.

Steam had come!

To the shouting signals of the Indians, the amazing ship on fire uttered a terrifying hoarse roar with a hiss of steam in a stream through the air overhead. That steam in a white stream was another flag of progress though the Indians did not know it. Later they did know it and knew more. They knew it presaged the coming of more and more white men. They realized it meant the passing of their own era forever. Henceforth — yes, down to the seventies — the

plains tribes were relentless foes to steam. They pitted the double jackets round exposed smokestacks and boilers above decks with bullet holes. They threw ropes across narrow channels in the river to snag the paddle wheels or slew round the prow on sand bars. They hid behind sand hills and sent fusillades of shots at the pilot house. Steam had to have firewood. Firewood could only be obtained ashore. The Indians set fire to piles of cordwood left by white choppers or charged outrageously for any chopped by themselves. When choppers went ashore, they were pillaged, stripped naked, scalped, robbed, harassed. In fact, when one poor white was put ashore with smallpox in quarantine near Pierre, South Dakota, he had his blanket stolen from under him, which resulted in a ravage of smallpox from the Arkansas to the Athabasca and left the warriors of the plains weakened for twenty years.

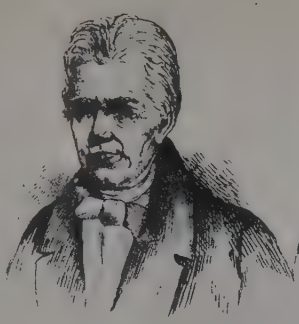
Chapter IV
"Fulton's Folly"—"The Sawmill On Fire." 1804–1830

ABOUT the time the wise wigs in Europe were fulminating about the impossibility of using steam as power for land or sea, a farm boy of seventeen had gone from a rude homestead in Pennsylvania to seek his fortune in Philadelphia. His name was Fulton. He became apprentice to a jeweler and studied art at night. Art, of all things in the world, as a foundation for mechanics! Aren't artists about as impracticable dreamers as can be found to build solid structure for commerce? This boy wasn't. He saved four hundred dollars before he was twenty-one, bought a farm for his widowed mother and went off to London to study under Benjamin West. Now London may have been full of dull-witted diplomats in 1786, but it was ringing with word of wondrous discoveries made on the Pacific Coast by Cook and about to be followed up by Vancouver. Fulton's jewelry experiences switched him into all sorts of useful and useless inventions for dredging harbors, making locks for canals, and what not — but all tingling with the tang of the sea. The new Republic was very friendly to France. Robert Livingston was minister to France. Fulton had an idea for a submarine to help Napoleon. Napoleon's engineers had no time for Fulton; but Livingston had. He and Fulton had devised a steamboat that worked on the Seine, as early as 1803; so the two came back to America as partners. Fulton was not the inventor of steam power for the

sea. What he did was to take all the inventions prior to his own and make them practically workable; but he could not have done that without Livingston's financial backing. He required large capital, which Evans and Fitch and even Stevens of Hoboken had failed to get. Livingston's partnership brought that capital. Yet when Fulton died in 1815, his venture was not yet a paying one. He died as he had begun — poor.

It was three years after poor Evans' scow for land or water had proved steam a workable thing that an English engine put in a river boat made a trial trip, August 17, 1807, up the Hudson from New York to Albany and really achieved one hundred and fifty miles in thirty hours. Scorn turned to wild acclaim. Perhaps poor Evans had not been such a fool. Perhaps Colonel Stevens of Hoboken, who had tried steam on water nine years before the *Clermont* went up the Hudson, hadn't such a crazy bee in his bonnet either! Perhaps Fitch — but Fitch — bless you, who was Fitch anyway? People had forgotten his very name by 1807.

But your eyes couldn't lie. There was that Fulton farm boy now a man aged forty-two, backed by such a wise man as Livingston — one of the richest aristocrats of the Republic — with Noah's Arks run by steam on the Hudson; yes, sir, it could go twenty miles an hour if it didn't stop at local river points, fast as a whole day on a sailing sloop, with shutters over the windows and two berth staterooms and carpets, and " bars " for gentlemen, and lounge rooms for



Oliver Evans.

John Stevens.

George Stephenson.

Robert Fulton.

All of these pioneer inventors died poor. Oliver Evans invented the amphibious steam wagon for water and land; John Stevens proved rails would hold a train on a circular track; George Stephenson built the first successful passenger train; and Robert Fulton was the father of the steamboat.

After George Stephenson's initial success on the Stockton and Darlington Line in 1825, he introduced a greatly improved type of engine known as the *Rocket* which ran twenty-nine and one half miles an hour.

ladies; and she pumped and splashed up the Hudson with a white train of water fret behind her and a white plume of smoke above her graceful as any lady ever seen. She was the year's wonder of every farm lining the Hudson. "Watch for her coming back—

When the *Clermont* pumped and splashed her way up the Hudson, in 1807, America went steam-vessel mad.

look — there she comes." The people on board the decks sang in the moonlight and cheered the folks gaping on the docks. No more stage journeys where you had to get up at midnight and wallow through mud for days. When the steamers whistled at the docks, lanterns came swinging down the town streets

and farmers came out and shouted " there she goes," and felt a curious thrill as they saw the lights in the staterooms above reflected in the water below. It certainly was an upside down world. The rabble, which had scoffed loudest, was now ready to chuck a sceptic off the docks.

Steamboating now went ahead so fast on the Ohio, on the Hudson, on the Lakes, on the Chesapeake, that it is hard to pick out authentic records of progress; and it was not opposed as the railroad was later; for where navigation ended, or winter chained the rivers, farmers and teamsters could make good easy money in off seasons by transporting passengers over portages — whether heights of land or falls — and the passengers, who transferred back from sleigh, wagon, coach, to the comfort of crude berth-beds without springs, were so glad of the restful change that they were not inclined to criticize the ship's cook and the charge which was not so high as land travel, and the clang of bells and racket of teams and cargo at midnight breaking in on sleep. Transfers were all gain to the farmers and all gain to the taverns, however loud the old coach lines and turnpike toll men howled " blue ruin " to high heaven.

Fulton and Livingston were quick to grasp the amazing opportunity for steamboats on the great rivers of the West — the Mississippi and the Missouri. Though Lewis and Clark's great achievement had been eclipsed by the War of 1812, there were huge cargoes of furs and supplies to be carried on the rivers of the West. Thither Fulton and Livingston

sent Nick Roosevelt to report at points from Pittsburgh to New Orleans. In spite of the Great Falls of the Ohio, which would necessitate two different lines, — one above the falls, one below — a boat one hundred sixteen feet long costing thirty-eight thousand dollars was put on at Pittsburgh. Pittsburgh shook its bewhiskered frontier head. "The thing might go downstream; but dang if it would come upstream!" Roosevelt had to wait at Louisville for high water to attempt to run the falls; and while he waited, he steamed back up to Cincinnati. "Gee-whittiker! There she was back up again. No use saying she couldn't do it. There — she'd done it." From that time on, steamboats of all sizes and sorts with barges and rafts in tow became a regular feature of river travel from Pittsburgh to Louisville and from Louisville to New Orleans. Fares and rates fell by half, cargoes and passengers increased by many more than double. By 1819 there were sixty steamers between New Orleans and Louisville. There were sixty on Lake Ontario and fifty-one at Detroit a few years after that first *Walk on the Water* astonished the Indians of the Upper Lakes; but the Missouri was a tougher highway. There the first steamer did not reach beyond Pierre before 1830–31, and did not get back up to Fort Union at the entrance to the Yellowstone till Catlin's famous voyage of 1831–32. It was slow going up the muddy, sand-barred, windy, tree-snagged, yellow floods of the longest river in the world. The steamers had, like the keel boats, to tie up at night; and by the time they had reached the

Yellowstone from St. Louis, ice was blocking the current; so the tie-up was often for a long winter. Yet, by the late thirties, there were on the Mississippi proper and the Missouri not fewer than two hundred thirty steam-propelled river craft. Old boatmen did not resent the innovation; for the steamers employed five thousand flatboats and two to three thousand river pilots who had to be hired locally for knowledge of sand bars, and sharp bends, and ugly sucking undertows in the current. It is interesting to know that in spite of the frightful disasters that overwhelmed his early sailing ventures to the Pacific, John Jacob Astor was one of the first backers of steam for the fur trade both on the Great Lakes and on the Upper Mississippi.

The great mistake of the Fulton-Livingston firm was to claim a monopoly in their patents for river traffic. They had really only utilized and improved the inventions of their forerunners. The moral and legal right of an inventor to a monopoly in his patent, and a royalty from his patent by all who use it, has been established and recognized in modern courts; but that was not where Fulton and Livingston came in collision with public sentiment. Monopoly of any sort stank in the nostrils of struggling states. Laws on interstate commerce had not yet been formulated. Besides, what was to hinder other inventors improving on poor Evans' land and water scow, or Stevens' devices over in New Jersey, and putting steamers of their own on coast and rivers and lakes? Fulton and Livingston's patents were protected only by the courts

of New York. The Hudson wasn't the Mississippi and it wasn't the Chesapeake. Much less was it the Great Lakes, where the Canadian fur traders were putting on steamers of their own. The lawsuits to defend their monopoly did as much to drain Fulton and Livingston's profits as the terrific outlay to meet new demands for steam carriers. If it was "sauce for the goose" over in New York to hold a monopoly, then it was "sauce for the gander" over in New Jersey and across on the Mississippi to hold like monopoly; and that brought the Fulton and Livingston firm in violent collision with that indomitable young schooner-ferryman, Vanderbilt, and that later buccaneer, Daniel Drew.

It was a case complicated by lack of law. Fights in courts are usually complicated by too much law. There was no Interstate Commerce Commission. There was still a twilight zone undefined between what the states could do under the Constitution and what they could not do. There was still the vague, almost parochial view that each state could back out of the Union if it wanted to — could go its own way in self-government if so minded. That dispute had still to be settled by the bloodiest war in the Republic's history; and the Republic was not yet forty years old.

Young Cornelius Vanderbilt, now in his early twenties, had been one of those free-lance, independent, lone-hand individuals who from purely selfish motives have done more to build up the United States than armies of uplifters who have prated of altruism

and the other fellow's rights because they had neither the brain nor the brawn to do anything unaided themselves. First as an owner of small schooners, then as a ferryman between points in Staten Island and New Jersey and New York, then as a supply runner for the troops in the War of 1812, Vanderbilt had built up for himself a fortune.

He was not only independent. He was violently, belligerently independent. He felt that the schooners built under his supervision from masthead to keel could show heels to any scow with cinders and boilers and what not endangering cargoes and passengers. That is — he had felt that way until he saw those sawmills on fire, with grasshopper rods pushing a wheel round faster than wind could drive sail, go pumping past him with a derisive yell from the jolly passengers leaning over deck rails. He might shout back but he didn't like their jeers. Much less did he like the brutal fact they were getting his cargoes. He was not one to butt his head against the stone wall of facts; so he took passage himself on the *Fulton* to Albany and back. He had the eyes of a lynx and the instinct of a wolf, and never a theory to hamper him. He saw lots of places where Fulton and Livingston's ships could be improved — more deck space, more cargo space, devices to improve the engines, increase the speed of the paddle wheels; but when he came back he recognized the cardinal facts:

Steam had beaten sail.

It had beaten it for all time.

It could defy wind and weather.

It could carry more passengers.

It could lower rates and freights and by drawing more business could not only make up for the difference in rates but far surpass that difference in profits.

All sorts of conflicting laws were passed. Passengers by steam were taxed. The tax did not affect short hauls, only the long. Then Fulton and Livingston had that monopoly for twenty years; but these laws carried force in New York only. Vanderbilt decided to try his luck in New Jersey; for New Jersey and Connecticut were about to refuse to permit vessels plying under a monopoly to enter their ports. Of course, vessels which could operate only between New Jersey and Connecticut and not come into New York waters were going to lose the profitable end of freight and passenger business; but Vanderbilt had run schooner transports in the War of 1812 and had yet to encounter the minion of the law he could not outwit.

To make a long story short — in fact, a fight of seven years — he tied up in a partnership with a New Jersey man who had the backing of a former state governor. Then the two defied the monopoly of New York State in order to force the Fulton and Livingston crowd to sue them — to put the test of the monopoly in the courts. Once, when the process servers were ready to seize Vanderbilt in New York waters, they found at the pilot wheel, not Vanderbilt but a young girl.

When the case finally went up to the Supreme Court and John Marshall handed down the decision in 1824, there was laid down in plain terms *the clear*

fact that no one state could lay a monopoly on another state. The Constitution gave the Federal Government the only power to control interstate and foreign commerce. Of course, that killed the monopoly utterly, though already it was ignored both on the Lakes and in the West.

Steam had won in its first big fight.

PART II

The Lure of the West

Chapter V

"The Most Expensive Gutters In The World." 1800–1830

WASHINGTON died shortly before Louisiana became a part of the new Republic; but he knew Gray had discovered the Columbia. Scores of New Bedford whalers and Salem traders were making yearly trips to the North Pacific before 1799.

Everyone recalls the famous picture of Washington crossing the Delaware through an ice jam. What he thought as he witnessed his ragged troopers tossing amid the ice piled up by current and tidal waves was probably that he had to win the Revolutionary War; but no man either before or after the War for Independence knew more of the awful conditions of all roads. On no subject did Washington harp and hark back and emphasize more than roads. He had floundered through their mud, autumn and spring; he had been bogged and impeded by their snows and ice in winter; and as a retired farmer he realized that summer, the only open season for American roads, was an off season. The farmer couldn't get his crops off till the fall, when ice closed the Northern highways — water and land — and floods too often endangered Southern and Western lines of travel. It is rather ridiculous here to refer to strictures of study-chair theorists as to the famous picture of Washington amid an ice jam being grossly exaggerated. Yet when the rivers of Northern New York, Vermont, and Connecticut went on a rampage in the summer of

1927, every paper in the Eastern States carried pictures of worse devastation, where motor highways lay under fourteen feet of water, rail bridges had been undermined from piers to spans, and whole villages laid flat as shingles.

Washington has been called the Father of his Country. He has also been called the Father of American Transportation.

In this he was in unanimous agreement with the master minds of his age. Madison, Adams, Jefferson, Gallatin, each and all realized that the Republic could be bound in unity only by common highways. Gallatin compiled and issued one of the first complete Federal reports on roads. Monroe had first vetoed laws to aid turnpikes, ferries, canals, with public lands. Then, realizing that the states were too poor to do the job themselves and that the old system of compelling every farmer to help on the road passing his homestead left appalling gaps of mud sloughs between the occupied lands, Monroe revised his early veto and authorized the grant of public lands.

Many people regarded the railroads as the first big land-grabbers. They were not. From Monroe's day, help of every sort, bonds, cash, loans, land grants, were authorized for ferries, bridges, turnpikes, canals. The first land grants to " wilderness roads " were in 1803 for Ohio. Five per cent of the proceeds from sales and tolls were to go back to the treasury — three per cent to the state, two per cent to the Federal; and toll gates had to be built every fifteen to twenty miles. Indiana, Illinois, Michigan, came in for

similar aid with similar returns for the state and Federal cash loans. There were few if any records of the government treasury boxes benefiting. There persists an equally foolish idea that national ownership of highways is a new cure for all traffic ills. It is not new. Neither is it a cure. National ownership was tried in every state in the Union down to the Civil War; and please note the fact, — not the theory, — it failed in every single case. It bankrupted the state treasuries. Where the need was greatest, the population was sparsest, the returns smallest, and the resultant taxes heaviest. When rates were raised to make canal or highway pay, the high rates at once decreased travel and freight; returns went down and taxes up. When rates were fixed low, the national experiment didn't pay; and again up went taxes. Traffic has a curious resemblance to an old-fashioned beam on a weighing scale. Force one leg of the beam too far down, and the other leg has a way of kicking too far up.

Washington, Gallatin, Adams, Monroe, Jefferson, were educated men with a world outlook and world knowledge. They knew that the Chinese had one thousand miles of canals as early as 500 B.C.; that Mesopotamia had one thousand miles of canals connecting the Euphrates and Tigris, at least four hundred years before Alexander the Great; that modern France had a network of canals, and rivers improved by canals, to the extent of three thousand miles. Yet France would hardly cover a patch on the map of the new American Republic.

Was it any wonder, then, before steam became a power to push and pull, to bore through mountains or climb them as a fly climbs a wall; to build bridges for passage across rivers, or propel boats on waterways, which bridges couldn't span, that the greatest minds of the new century first turned to canals as one practical means to get highways for trade?

In this they were, of course, backed by the public — backed furiously, vociferously; for necessity was the bayonet stabbing the public. Take two examples. A dozen could be given from Cape Cod to Florida. You could send your sloop up the Hudson. Between Albany and Lake Champlain came a section where your sloop couldn't go. All right. What did it matter? It mattered so much to New York City that all Northern New York State traffic was going down Lake Champlain to Montreal.

Or suppose your sloop nosed up the Mohawk, the way of the old Indian canoes. Came falls, rapids, shallow waters — a whole succession of them, easy for a light canoe to portage, impossible for a ship with cargo. Well, what did that matter? It mattered that all Western New York traffic slipped over to Lake Ontario and the St. Lawrence and went down to Montreal. New York was losing Western traffic. Boston would get by coast craft the Northern tier of Atlantic States; and New York would get what? — Pretty nearly nothing but Hudson River traffic and such ocean traffic as the little strip along each side of the Hudson would support and take back in trade. New

York merchants and shippers had to bestir themselves, or see Manhattan become a shoal-water port.

We may denounce New York's commercialism; but New York is the second greatest commercial port in the world to-day because far-visioned men laid the foundations of New York's greatness by the faith that removes mountains.

Take another example — the terrible Cumberland Mountains and Blue Ridge barrier between the South Atlantic States and the Ohio. Here, if your sloop poked up the Chesapeake, whether she nosed into the Delaware or the Susquehanna, she was again stopped, as were the sloops up the Mohawk. If she went up the Potomac or the James, there were the terrible barriers of the Blue Ridge and the Cumberlands between her and the Ohio. Well, what matter? No matter except that all the great new Western cargoes would go down the Ohio and the Mississippi, to the loss of Baltimore and Philadelphia, and build up those muddy frontier village flats, St. Louis and New Orleans.

It is a pretty good guess that the average frontiersman cared not one stiver for the big city plans of New York, Philadelphia, and Baltimore — cared not one stiver, and knew less. His nose was too close to the grindstone of making ends meet. The ends could not meet. That was the trouble; and he could not stick — except in the mud of his own bad roads — unless the ends did meet, and overlap, and leave him enough to live and save against old age and the rainy day.

It was the cost of getting stuff to market and getting stuff back from the market that made the frontiersman a desperately urgent factor for roads.

What was that cost?

Up to 1800, it cost four dollars and eighty cents to get a bushel of grain seeds or grain feeds from Montreal to the head of the Great Lakes; and that was the cheapest water highway in the world except the ocean, which didn't in the least benefit the inland farmer. His difficulty was to get his stuff down to and back from the ocean.

In 1790, it cost the farmer in Western New York over twenty-four cents a bushel to send wheat to New York.

It took three months to get a cargo from Pittsburgh down to New Orleans.

Little marvel that citizens, statesmen, farmers, frontiersmen demanded highways, whether land or water. Less wonder that wise men guided by the experience of the past turned first for relief to turnpike roads, bridges, ferries, and most of all to canals, which had proved serviceable in older lands.

From 1800 to 1830 when steam came, turnpike charters, bridge and ferry concessions, coach companies, and canal financing became an epidemic gambled in as madly as ever rail shares were kicked and shuffled about in a frenzied stock exchange. In one year thirty-six small bridge charters — pure monopolies — were asked from New York State alone; and in 1808 more than half a million was spent in projected, completed, and collapsed bridge ventures.

Lotteries were held in New York and Pennsylvania to raise money where public grants fell short and public subscriptions failed. It almost staggers one to look up old annals and find that many of those poor turnpike roads cost from nine thousand to thirteen thousand dollars a mile — as much as a Western prairie steel road, where ties and rails and box car for a station were dumped on the plains above flat land or muskeg that swayed and rose and sagged as a rattle-trap train rocked over the steel.

Gallatin's Report in 1808 — the first complete survey of transportation in America — covered amazingly from Maine to Florida, from the Atlantic to the Mississippi, from the St. Lawrence to the Great Lakes, and the little inland links that would be necessary. If read by European diplomats, it must have provoked a patronizing smile. Here was a Republic not thirty-five years old, with not four million people, laying out highways covering distances vaster than the Roman Empire with its fifty thousand miles of roads. Incidentally, it may be set down that the Republic a century later had railroads alone covering almost six times greater distances than the Roman Empire's, and they were built neither under imperial ægis nor by slave labor. They were built of the individual's savings pooled in a thing called capital with free labor, drawing, during the War of 1812 and during the Civil War, higher wages than ever before known. Sometimes, the capital came dribbling in $1 subscriptions as in Pennsylvania; sometimes, as in New York, in $100 subscriptions, paid in $3 assess-

ments up to fifteen different assessments, when the frequent changes in ownership make it impossible to learn whether the balance of assessments were paid.

Bridges that would slew round giving open way for sails and smokestacks were as yet unknown. Bridges roofed to protect from snow were dreary and dark. Dickens complained about the gloom of these bridges. When lanterns first began to blow back and forward in the dismal rains of New England above a bridge at Boston, in 1786 — proudly described as the longest in the world at that time, 1,503 feet from first pier (of wood) to last pier — the citizens were invoked to go and inspect " the forty elegant lamps to illuminate *when necessary*." The lamps were to burn only " when necessary."

But canals — first!

Before the Civil War, the country had fifty-two navigable canals, and fifty-four rivers had been tabulated as navigable in sections or parts. These canals did not come as full-grown waterways. They came in fits and starts, in bits and breaks, as the money could be raised or necessity forced action. The great water track later known as the New York Barge Canal had from fourteen to nineteen different sections before it was known as the Erie Canal, 352 miles from Albany to Buffalo; and because it was not continuous, by 1825 it was sneeringly called " the longest gutter in the world." Long before it became the Barge Canal, nine million dollars had been absorbed in its four-feet depth and forty-feet width. Much later, when it had absorbed two hundred millions, it was again called

"the most expensive gutter in the world." By the middle of the century, the country had almost 4,500 miles of canals costing over two hundred millions — of which more than 2,000 miles had to be abandoned and 2,000 more could be used only in part. In thickly settled sections where no other route was available, as certain sections of New York, canals could pay thirty-one per cent dividends. Other sections never paid a dividend in the twenty to thirty years of their existence. In Pennsylvania, also struggling frantically to get traffic from the West to the Atlantic, canal stocks sold at one hundred per cent above par by 1832.

The reasons for the failure of the inland canals, when such later ocean highways as Panama and Suez diverted and captured world traffic, hardly need telling.

The canal was slow.

It wound in and out and round about as the hills twisted and turned.

It was too shallow for heavy or deep cargo.

It froze up just when most needed.

And when steam came — steam was swift.

Steam was direct. It could go through or over mountains.

Shallow or deep waters made no difference to steam.

Winter or summer, steam could ply over its swift shuttle of rails.

Did the canal give up the ghost without a struggle to steam? It did not.

The canal at first compelled steam to charge as low as water to get traffic. It did more. It seems amazing to record the fact. Although canals did *not* pay either private or state builders, their power was so great in the legislatures that they compelled the railroads (1) to pay a rebate of their profits to the canal and (2) they forbade the sections of rail where canals were *not* paying to carry freight at all. In such sections rails had to confine their traffic to passengers. These laws were not fully repealed until the fifties. Rebates and land grants did *not* begin with rails. They were forced on rails by law at the behest, or lobbying, of hostile water and common road investors.

It was as inevitable that steam rails should surpass the slow barge on the canal as it was that the hissing paddles of the steamboat should go flashing past Vanderbilt's swiftest schooners. It was part of the epic of speed.

Yet to call the canals planned by Gallatin in his great report "the most expensive gutters in the world" is unfair. They served their day and served it well when nothing else served in a more leisurely slow-moving age. Though Leonardo da Vinci in the late fifteenth century had devised locks, no locks did the first canals know. It was a case of digging a ditch between the head waters of rivers, or from lake to river, or from swamp to seacoast, and letting the shallow craft down by natural flow. No sitting snug in a tower beside gigantic concrete walls, touching an electric button and swinging great gates open or shut to let the ship ascend or descend with the lift of

It is interesting to see how the development of the New York Central Railroad from Albany to Buffalo paralleled the old Erie Canal, once sneeringly called "the longest gutter in the world." The canal did not yield its supremacy to the railroad without a bitter but futile struggle. The small dotted line shows the route of the canal; the heavy black line, that of the railroad.

waters. The ship had to take care of her own means of push or pull. No electric puller shuttling along on land abreast the ship to tow her through as in modern Panama. The canal boat floated down with the current; going up, mules were hitched to her fore thwarts and sent at a walk or gallop up the towpath; and many a poor New England boy earned his first wages to work toward that Eldorado of glamour — the West — by driving the towboat mules. Didn't Garfield begin life as a mule driver along the towpath? When steam invaded the canal with its white flag, great floats and barges followed the tugboat like pompous grand dames followed by lackeys into court.

Canals served their generation. That was enough. More leisurely folk than we are sat on the hurricane deck — and, I doubt not, made love under the moon and thrummed guitars; or leaned aslant under dainty parasols and paid the cumbersome compliments then in vogue; or smacked their skin-tight satin trouser-legs in jokes more ponderous than the compliments. "Hah, ladies, but this is progress!" Reading the diaries of old canal-boat travelers, one comes on starry nights when crews and passengers sang old-time song to the thrum of negro guitar; or danced old jigs on the hurricane deck; or watched Venus blink in and out of the western sky. There is no impression of people who knew what hurry meant. Hurry was considered vulgar — the symptom of a confused, ignorant mind. If a gentleman were quick mentally, he masked it under an elegant pose of dalliance and plied his mental speed unsuspected. If it rained, pas-

sengers could go below and enjoy mint juleps. They took these slowly in sips with the gusto and relish of connoisseurs; or the gentlemen could "hurdle jump" those "bars" in retired sections of the boat, while the ladies — bless 'em — reclined in the lounge room, or retreated to rooms with berth-beds. It was on the whole a happy transition from post-road travel as one writer describes it, "with all the comfort of a home."

Perhaps the worst legacy of those old days which has come down to curse us was the confusion in the public mind between the highway as a state-owned thing and the highway as a thing owned by private investors.

When the canals failed financially — as nearly all did — and were assumed by the state, the public came to regard highways as state owned; but when rails came along, and state-created and state-owned rails failed financially, and private investors took up the collapsed projects and put them through by assessments on private purses all the way from $1 a share to $100 a share and the private investors drew not a dividend for twenty years, drew not a dividend at all, many of them, till absorbed or sold to stronger private investors; who owned the highway then — the state or the investor? That is a contest that confuses us to this day.

AUTHOR'S NOTE

The very best example I know of rail beating canal is the old Miami connecting the Ohio with the Great Lakes. This canal was begun in 1820–22. There was not a mile of rails in Ohio for another ten years.

Ground was broken at Cincinnati amid such jubilation as later serenaded rails. The first forty miles cost $11,000 a mile, more than to lay a prairie railroad. But freezes came for forty-nine days and mud silted up the shallow bottom and lands had to be granted by Congress to go on by 1828 — over four hundred thousand acres. Canal stocks were freed from taxation. Banks came to the rescue with generous loans. School lands were sold to raise money. Toll rates were raised to five cents a passenger a mile. The land sold at from two to four dollars an acre; and the grand total cost of the canal rose to over $4,000,000 for 289 miles — over $22,000 a mile, exceeding the cost of rail building in the foothills of the Rockies. Public administration, private management, state commissions — all were tried. From 1857, when rails in Ohio increased to 2,834 miles, the canal could not make revenues pay even the expenses of operation, let alone interest on costs. The rails at this period boasted a speed of twelve to thirty miles an hour. The canals averaged two to eight. The receipts of the rail were *net* $5,000,000 in 1858; the receipts of the canal $4,000 less than the cost of keeping open. Finally, when the loss to the state went up to $8,000,000, Ohio quit cold. She had paid a very high price for her experience; and no wrecked rail had "filled the canal up." The rains did that job. It was an "expensive gutter"; but let us not condemn too harshly. It served its day and left a lesson that ought to have a monument. Ohio was determined to make that canal pay whether it could or not; but how could it charging two and a half times higher than any rail in the state and at best twice as slow and twice as uncertain?

The Chesapeake and Ohio Canal cost $60,000 a mile, as much as for a rail in the hardest section of the Rockies. Within fifteen years 8,500 miles of canals were built in New York, New Jersey, Pennsylvania, Maryland, Virginia, costing $250,000,000; and of that total, half can be set down as utter loss. Few rails in the worst buccaneer period surpass that record.

Chapter VI

Tom Thumb Races The Gray Mare For The West. 1828–1848

STEAM had beaten sail on water. How about land?

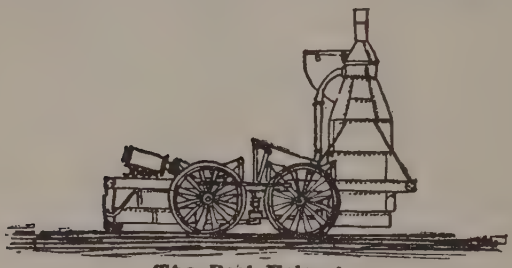
Steam development on land was prodded and forced by the same factors that had compelled the building of canals, then the use of steam as a propelling force on canals and rivers. While the Atlantic cities were backing canals in a wild speculative mania, chiefly to keep all traffic from going to rival cities, it was the great traffic to and from the West for which they aimed. It was really that race for Western Empire which did not end until our own day, when the last spikes were driven to link Atlantic to Pacific.

The greatest impediment to steam on land in the race westward was lack of experience. The series of mistakes produced a terribly heavy casualty list. We may smile at those mistakes, but they were not laughable to the enthusiastic backers of steam on land. Steam needed money. Money from hard-working folks, who had saved, can't just be burned up in tryouts. It must have at least a sporting chance for some returns.

Consider a few of the early mistakes that paved the way for future success. Those blunders must have broken many a heart and crippled many a purse. They can be massed together: all the new rails made similar errors — rails from Boston, rails

from New York, rails from Philadelphia, rails from Baltimore.

In England, the roadbed was laid for eternity; but the engines were very light — five, seven, ten tons. In America, almost opposite conditions demanded practically reverse construction. England was in the main flat. America had terribly high and steep grades and an appalling number of sharp and long curves. America was too poor to construct roadbeds for all



The Best Friend.

The vertical boiler was one of the clumsiest features of some of the first steam engines. This engine had a grasshopper leg to hurl the wheel around.

time; besides, they were not advisable. Such heavy granite, inflexible roadbeds were too hard on light engines with a heavy load. America could use a lighter roadbed, but needed a heavier engine for hard grades and bigger loads and vastly longer distances.

Were the rails to be iron or wood? At first wood was used with an iron strip laid flat on top; but in heat and frost that iron strip had a trick of curling up, and one such "snake head" — as the train crew called them — came up through the passenger car

floor and "bit a lady's leg." The mishap caused a great deal of comment adverse to rails. Also, wooden rails rotted from exposure to weather. The spokes of the early wheels for engines and cars were of wood. When the train went rattling over the rails at the awful speed of fifteen miles an hour the dried hot wood "screeched." Sometimes in cold weather the exposed boilers got a chill down their spines, for jackets had not been invented to protect boilers; so directors, in deadly fear lest steam fail, tried sails and kept horses near on call to hitch to a stalled train and complete the journey. This was on a Southern line where exposure to frost was least; and it gave farmers along the right of way a bright new idea. Why shouldn't they use the new highway as a team road for hauling produce to market? Splendid! Somebody else had built the road. Why not use it? So many a terrified engine man rattling round a curve or down a steep grade with his heart in his mouth had often to choose whether to make the team jump or jump himself; sometimes the decision had to be made quickly and both jumped, with an aftermath of hissing steam and lawsuits and profanity that might shock our delicate ears. At first there were no railway sidings between many points for trains to meet and pass. The unwritten law of the road was that whoever passed the halfway point first had right of way. The other fellow had to back to the nearest station where there was a siding; but the other fellow sometimes refused to back, when the train crews got out and settled it by fisticuffs. I don't know that that law was

anything like as ridiculous as one on our modern statute books, which has become a classic — that if two trains meet on parallel sidings over a road crossing, one shall not go ahead till the other passes. How long these two polite trains are expected to stand on their hind legs and bow profoundly to each other in hisses of steam and bellowing toots — the law does not say.

Every road had a different gauge in width; so when a railway was made up of many different links, as were the New York Central, Pennsylvania, and Baltimore and Ohio, the passengers had to get out and transfer; but to keep the transfer points easy money for teamsters and taverns, many rival towns refused to give the rails right of way inside town limits. This happened not only in the antique South but in progressive New York State. These transfer points were known as " the isthmus " and famous for " rotten eggs and cabbages " when rails tried to connect. Sometimes in cold weather, when the boiler refused to heat up fast, the train crew would get out and give the rear car a tremendous push down grade; but this produced such a terror of the train getting out of control and running away, there was actually patented an invention for a great claw hammer racket wheel to rear, which could be dropped at need to grip the cross ties and hold her back. So far as I know, this was the first automatic brake. What happened to the ties so clawed up by an iron wheel with grappling hooks for cogs is not told. The device was not extensively adopted.

The turnpike roads — in which great quantities of private funds had been sunk — opposed with fury the new steam rival as they had opposed the canal. In most cases it was cheaper to buy out the turnpike company at top prices by giving it shares in the railroad, or paying the cash price and adding that cost to the capital of the rail company. This seems to have been the first "watered stock" injected in railroad capital.

In the South and West, the first passenger coaches resembled log cabins on wheels; but these did not

The passenger coaches on the railroad over the Southern Alleghenies in 1835 resembled log cabins on wheels.

yield enough revenue. Double deckers were then tried; but double deckers might upset and they raised the center of gravity too high and had to be discarded.

Until processes were devised to use blasts of air to force a coal fire, coal did not react well. Wood was the fuel; so the smokestacks were huge inverted pots, that had to have hinges to duck back under bridges; and, as there was no spark arrester, awnings and nettings were used to protect the heads of the engineer and fireman; but the sparks set fire to the awnings.

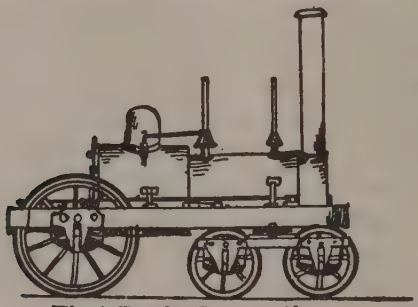
The status of the conductor was a grave question. Was he to be regarded as the captain of a platoon of troops? He was called "captain of the crew" and took his stand as lord of all he surveyed, either on the rear platform of the engine or the fore platform of the first passenger coach. Or was he to be a sort of gentleman treasurer for the directors? Reliable and commanding and dignified he must be; so the first conductors appeared officiating in plug hats with long frock coats and high choker collars. What the wind and the smoke did to that pompous costume can be guessed. It did not add to dignity. The conductor's salary was not far below that of the first presidents of the company. He drew $2.50 a day, where the president drew from $1,000 to $2,500 a year. Considering the difference in the buying power of the dollar, that pay was not so far below the $8 to $10 and $12 a day now in vogue. Then as now, it was considered that a man on whose quick good judgment the lives of the passengers and the good will of the public depended must be far above the average. Why the presidents' pay has ascended so far above the conductors' in our era hardly needs explanation. The president of a great rail corporation to-day commands an army of from fifty to a hundred thousand employees and decides matters of policy which may affect for good or evil from ten to twenty million people in the line's territory. The conductor of that era was provided with a big strong tin box to collect cash fares and with heavy cardboard tickets from point to point, which could be used over and over.

Stations, at first, there were none. They had to be built and as time went on became more comfortable than many a passenger's home, and in good centers really magnificent temples of traffic. Warehouses for freight, there were none. They, too, had to be built, and shippers could not understand why those warehouses could not be used free for an indefinite length of time. Whistles, there were none. The first conductors used big tin whistles. Bell ropes for quick signal, there were none. The conductors waved or shouted to the engine man.

Turnpike roads began with a toll gate. Rails began with a passenger rate; and the turnpikes were strong enough to force the rails to keep their rates pretty much even with the turnpike. That is why there was such an amazing difference in the rates — three cents and four cents a mile in the North where turnpikes were many and powerful; eight cents and ten cents a mile in the South where turnpikes were few. The rails were compelled to equip themselves at a far greater cost, and to sell a superior service at a lower toll. Even as late as 1848, many rails were not allowed by law to take freight traffic. It would have diminished revenues to turnpikes and farm teamsters.

Down to 1839, two candle lanterns were the maximum for a passenger coach. There were no wash rooms. There was no water supply. There was no heat. Urchins along the road earned pennies and dimes by selling hot bricks and hot stones to passengers for foot warmers. In both the directors' and train men's minds there was nervous terror at first that the train

wheels would not stay on the rails going uphill and downhill. The flanged wheel and the T rail were still to be worked out. The puff-puff of a big mountain engine girding up its steam power to climb a mountain and the prouder snort and switch of its tail engine as it rattled down a steep grade — which little boys and girls now sing in their nursery rhymes: "I think I can — I think I can — I think I can" — then, "I know I can — I know I can — I know I can" — had not yet been devised in many inventions.



First Bogie Locomotive

The four-wheeled "bogie" truck pivoted or swiveled on the main frames enabled the wheels readily to follow the curves of the track.

As to speed, it was as late as 1835 that a director burst into a meeting of his company operating a Boston and Worcester line, shouting triumphantly: "Well, here we are, friends — we came by rail almost forty-two miles in less than three hours."

Shippers of freight, where freight was permitted, packed their own cars and took their time about it. They could not understand why an empty waiting car was a loss to its owners, though they understood

perfectly that problem in simple arithmetic when, acting as teamsters, they charged for waits and going out or coming back empty to the stable.

Where rails were so desperate for funds that they had to go to the state for aid, the state provided that — no matter how long the private investor had to wait for his first dividend — if the dividend went above ten per cent, the surplus must go to the state. That was the first " recapture clause " in state laws on rails. Yet more, the state aiding the rail provided that within twenty to thirty years the state should have the right to buy out the rail at the state's valuation. Though the rail might for years put back all profits in improvements, several states — wise old Massachusetts among them — forbade stock dividends. One New England state, on giving charters for rails' right of way, enacted that the rail companies should be compelled to pay the owners' valuation no matter what that was. Was it any wonder that such charters fell stillborn from the legislatures and no rails were laid? The public would not buy stock in such ventures. From those very laws dates the complete ruin of many a little New England hamlet, where the water wheel of the mill gathered moss and the people moved away. The old burghers of the indignant hamlet complained that " the rail had gone round another way " and left them " ditched." It had to. And if you want to know why in so many of the links making up the Boston and Albany, for instance, or the Mohawk-Erie trail of the New York Central, there were curves and kinks that had later to be made

more approximate to an air line, you will find the reason in the foolish state laws or the still more fatuous opposition by the turnpikes and canals.

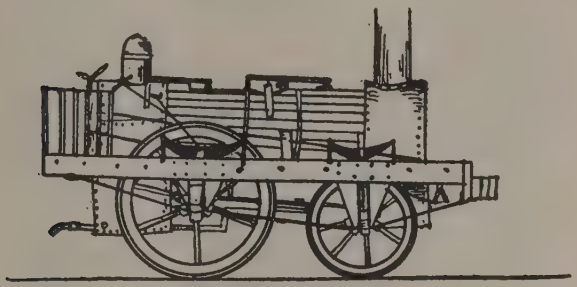
The West to-day is regarded as " the great trust buster " of combinations among rails. Contrariwise, back in the thirties and forties, it was the movement west that compelled the repeal of many foolish state laws. The Eastern manufacturing towns had to get their goods to the West, though the West in those days was only Ohio, Indiana, Illinois, Michigan, Wisconsin. When the little New England States found the manufacturers of Boston, New York, Philadelphia, Baltimore getting new markets, they repealed the foolish hampering laws; but in many cases it was too late and they never recovered their prestige and prosperity. New Hampshire, Vermont, Massachusetts, and Northern New York are dotted with such relics of their own tragic blunders.

Similar rivalries intruded in state feuds. New Jersey and Connecticut were jealous of New York. New Hampshire and Vermont were jealous of Massachusets. Maryland and Delaware and Virginia did not love Pennsylvania. Each seemed to think it could grab a bigger share of prosperity for itself by pulling its neighbor back a little, or lift itself by its own boot straps by giving a thrust of its boot-heel to its rising neighbor.

The lure of the West begins appropriately on the Baltimore and Ohio. The ultimate goal down to 1850 was the great Ohio and Mississippi Empire.

As told before, Philadelphia and Baltimore had

sent Allen and Strickland to report on and buy some English engines. These engines — the *Lion*, the *Delaware*, the *Hudson* — reached the United States in 1829. They were not successful. They were designed for heavy trucks, gravity coal carriers, and light frequent loads, whereas what America needed was an engine for light trucks, long hauls, and heavy loads. Allen invited the gaping sightseers to accompany him across a wobbly trestle; his invitation was not ac-



Planet Type.

In this light American type of engine the center of gravity was too high for safety at the curves.

cepted, though when they drove the *Lion* across the shaky trestle, the crowds split the welkin with applauding yells. The engines had cost only from $2,900 to $3,600 each. They would to-day hardly be usable to haul dump carts for a coal mine. But they had proved steam was the coming power; and Baltimore had visions of getting that Ohio traffic to shipside if workable engines could be devised; and the workable engines were devised by amateurs — amateurs, because steam had as yet no experts. The Baltimore

and Ohio got its charter by 1827; but it met the usual juggling between rival states over the charter. It wisely put its capital — five millions — high enough to extend right across to the Cumberlands. Citizens were to have the right to put private vehicles on the tracks, and tolls were fixed hidebound. When one cons over the restrictions tied round the Baltimore and Ohio's infant neck, it is a marvel the en-

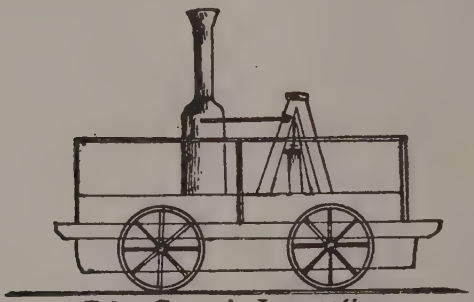
In the early development of the Baltimore and Ohio it was sometimes necessary to substitute horse-power for steam.

thusiasts behind the project, even with the blind faith of little children, ever had the courage to go on. Two of the turnpike companies were so strong they got out court injunctions forbidding the Baltimore and Ohio to cross their territory. Of course, this holdup was shortly overcome by hooking up the turnpike and canal concerns with the new rail venture. Through the suburbs of towns where an engine was to be used in place of a horse, "*it would not be prudent to establish a higher velocity than the walk of a horse at*

two-and-a-half miles per hour . . . to and into a great emporium such as the city is destined to become." Ground was first broken on July 4, 1828, and Charles Carroll of Carrollton — then ninety years old — laid the first corner stone, with these prophetic words: "*I consider this among the most important acts of my life; second only to signing the Declaration of Independence, if even second to that.*" To the credit of Baltimore people, twenty-two thousand citizens subscribed for the stock privately issued. The subscriptions were three times greater than the offerings. Following England's example, a roadbed was laid to last long as an ancient Roman army highway. Strap iron was laid on the sleepers, spikes four inches long were driven in ties, and when a test train was run with horse power, it was proved the wheels would stay on the tracks at fifteen miles an hour.

Now, Peter Cooper was a landowner near Baltimore. If a train would stick on rails with horse power, thought he, why not with steam power? The engine he had built became famous as the *Tom Thumb*. The race between the Gray Horse and the *Tom Thumb* on parallel tracks has gone down in history as renowned as Christopher Columbus' discovery of America. *Tom Thumb* was constructed in 1829, no bigger than a hand car, with a little upright boiler like a kitchen bath heater, and the greatest race in American history was held on August 28, 1830. Here is the account of one passenger in the single coach attached:

" The trip was most interesting. The curves were passed without difficulty, at a speed of fifteen miles an hour. The grades were ascended with comparative ease. The day was fine, the company in the highest spirits, and some excited gentlemen of the party pulled out memorandum books, and when at the highest speed, which was eighteen miles an hour, wrote their names and some connected sentences, to prove that even at that great velocity it was possible to do so. The return trip from the Mills, a distance of 13 miles, was made in fifty-seven minutes.



Peter Cooper's Locomotive.

The famous *Tom Thumb* of 1829, the first steam locomotive built in America, was about the size of a modern hand car.

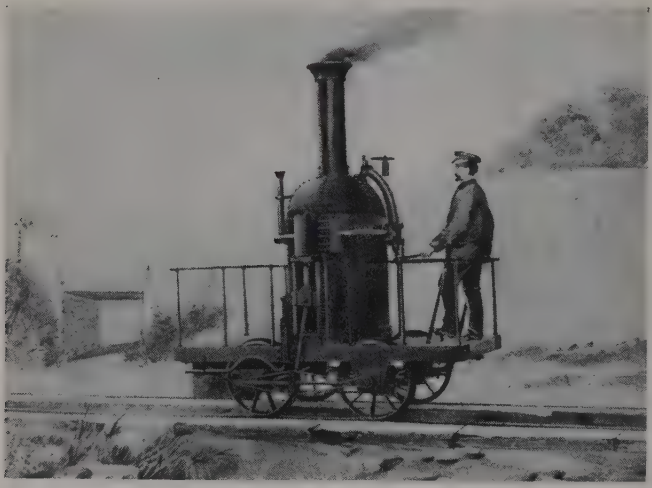
" The triumph of this *Tom Thumb* engine was not altogether without a drawback. The great stage proprietors of the day were Stockton and Stokes; and on that occasion a gallant gray of great beauty and power, was driven by them from town, attached to another car on the second track — for the company had begun by making two tracks to the Mills — and met the engine at the Relay House on its way back. From this point it was determined to have a race home; and, the start being even, away went horse

The opening of the Stockton and Darlington Line on September 27, 1825 was "the most famous day in rail history." Stephenson's train weighed nearly ninety tons and attained the speed of eight miles an hour.

The famous race between Peter Cooper's *Tom Thumb* and a horse car took place in 1830.

RAILROAD DEPOT AT PHILADELPHIA.

It was more than a decade after the race of the *Tom Thumb* and the gray mare that rails were permitted to enter towns. This old print shows the first railroad station at Philadelphia.



The *York,* built by Phineas David, won a prize of $4000 offered by the Baltimore and Ohio Railroad in 1831 for the best locomotive.

and engine, the snort of the one and the puff of the other keeping time and time.

" At first the Gray had the best of it; for his steam would be applied to the greatest advantage on the instant, while the engine had to wait until the rotation of the wheels set the blower to work. The horse was perhaps a quarter of a mile ahead, when the safety-valve of the engine lifted, and the thin blue vapor issuing from it showed an excess of steam. The blower whistled, the steam blew off in vapory clouds, the pace increased, the passengers shouted, the engine gained on the horse, soon it passed him. The lash was plied — the race was neck and neck, nose and nose. Then the engine passed the horse, and a great hurrah hailed the victory. But it was not repeated; for just at this time, when the gray master was about giving up, the band which drove the pulley which moved the blower, slipped from the drum. The safety-valve ceased to scream, and the engine, for want of breath, began to wheeze and pant.

" In vain, Mr. Cooper, who was his own engineer and fireman, lacerated his hands in attempting to replace the band upon the wheel. In vain, he tried to urge the fire with light wood. The horse gained on the machine, and passed it. Although the band was presently replaced, and steam again did its best, the horse was too far ahead to be overtaken, and came in the winner of the race. But the real victory was with Mr. Cooper, notwithstanding. He had held fast to the faith that was in him, and had demonstrated its truth beyond peradventure."

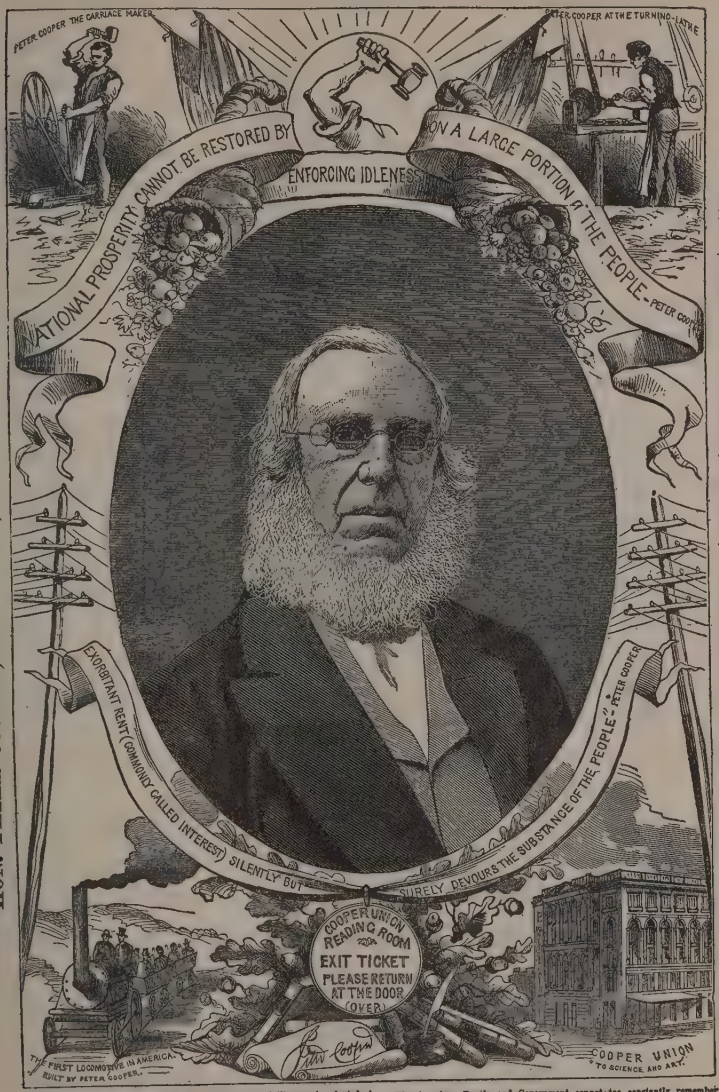
Baltimore enthusiasm was not quenched. Sidings, switching devices, turnstiles or tables for engines — came in quick succession; and plans were under way

for extensions to Washington by 1833. A train of seventeen cars did reach the Federal capital by 1835, in two hours and twenty minutes. On that train traveled relatives of the great men who had urged Gallatin's early survey of transportation in America, a Washington, Adams, a Jefferson, Madison. With that record, mails by horse post and stagecoach transferred to the Baltimore and Ohio. Teamsters retaliated by soaking the railroad laborers with bad whisky, beating up firemen on stalled trains, and shooting train crews from ambush along the tracks. By 1837, the Baltimore and Ohio had reached within sight of the Cumberlands, but of the first big capital *not a penny remained in the treasury*. Laborers' wages were paid in scrip to be redeemed in cash or goods in Baltimore; and bonds guaranteed by the city and state to raise more money could not be sold at a discount. To lash up flagging faith in the rails as an investment, local newspapers compared "the sparks of the flaming Mercury" to "a volcano creating new continents," the lighted coach windows to "torches to new empire," the speed to "swimming in space" — but all in vain. With the hard times that culminated in the panic of 1837, people simply had not the money to invest and banks did not dare advance loans of clients' money without at least a prospect of profit.

At this juncture came some very extraordinary factors in American railway building. Meetings held in churches — yes, opened with solemn prayer by a Quaker in an Episcopal church — failed to raise money; but they did reëstablish waning and wobbling

INDEPENDENT GREENBACK PARTY.

Headquarters, Union Square (cor. 14th Street and 4th Ave.,) New York.


PETER COOPER THE CARRIAGE MAKER
PETER COOPER AT THE TURNING-LATHE
NATIONAL PROSPERITY CANNOT BE RESTORED BY ENFORCING IDLENESS
ON A LARGE PORTION OF THE PEOPLE.—PETER COOPER
EXORBITANT RENT (COMMONLY CALLED INTEREST) SILENTLY BUT SURELY DEVOURS THE SUBSTANCE OF THE PEOPLE.—PETER COOPER
COOPER UNION READING ROOM
EXIT TICKET
PLEASE RETURN AT THE DOOR
(OVER)
THE FIRST LOCOMOTIVE IN AMERICA. BUILT BY PETER COOPER.
COOPER UNION
FOR SCIENCE AND ART.

I am convinced that when a true American System of Finance is adopted which shall put all that circulates as Money entirely and exclusively under the Control of the Government, MAKING IT RECEIVABLE FOR ALL DUTIES AND DEBTS, Employment for all the Working Classes, and Prosperity for the whole Country will be the natural and permanent result.—PETER COOPER.

The American People and Government cannot too constantly remember that it is utterly impossible for us as a Nation to buy anything cheap from foreign countries *that must be bought at the expense of loosing our own gold. Raw Materials unused, and our own Labor unemployed.*—PETER COOPER.

[ENGRAVED EXPRESSLY FOR THE "IRISH WORLD."—RE-PRINTED BY THE NEW YORK MERCANTILE JOURNAL CO., 350 PEARL STREET, NEW YORK.]

HON. SAMUEL F. CARY, of Ohio, Candidate for the Vice-Presidency.

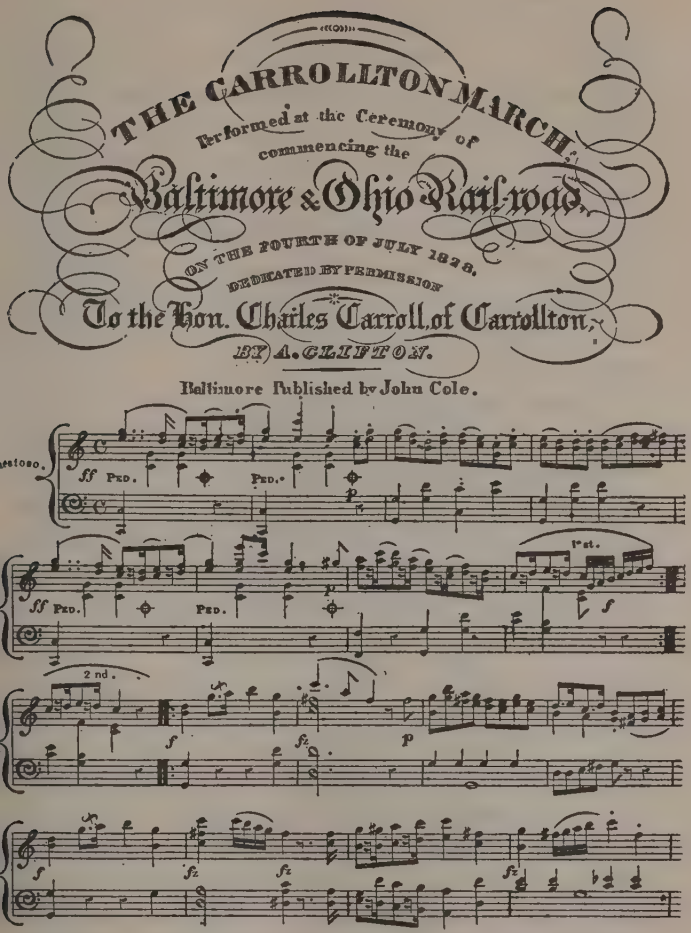
HON. PETER COOPER, of New York, Candidate for President.

arly half a century after he built America's first steam locomotive, Peter Cooper became the candidate for president of the Independent Greenback Party in 1876.

faith in steam as a paying power. Though the state and the city added six millions to the working capital to complete the road to the Ohio, for which the road had to pay six per cent, the fact that 1836 was a hard winter, and ice on the rails stalled the engines so that horses had again to be used, jolted that faint faith. Passengers decreased almost twenty per cent.

Then the desperate directors adopted the new expedient of paying contractors in those non-sellable bonds. By 1841, eleven years after the race with the horse, the directors did succeed in paying the restive shareholders two per cent. Within one year of that unwise gesture of a success not yet assured, it was actually proposed to foreclose the mortgages held by both state and city against the turnpikes and canals, which had been absorbed by the Baltimore and Ohio. One good came out of all these ills, like air cleared by a thunderstorm. Many of the foolish restricting laws were repealed. The rails could enter towns. Freight was permitted. In fact, it was figured that coal freight might bring returns up to pay costs.

Then came the greatest help of all. In England, where population was dense and building easy, railroads had been a colossal success. Baring Brothers, the great English banking house, began taking Maryland rail bonds. This was in 1848. The returns financed the Baltimore and Ohio through the most expensive section of the Cumberlands. Construction, without equipment, had now cost seven and a half millions — absorbing all the first capital and a great deal of the bond returns. The name Baring Brothers



Copy right secured according to Act of Congress July 1st 1828 by John Cole of the State of Maryland

Written specially for the occasion, this music was played at the ceremony held when ground was first broken for the Baltimore and Ohio Railroad. Twenty-two thousand citizens of Baltimore subscribed to the stock privately issued.

should be held in mind; for the crash of the Barings brought one of the most terrible panics America ever knew.

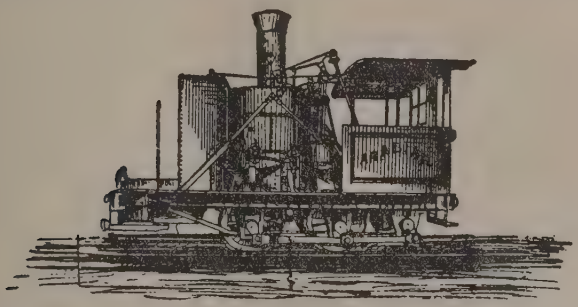
Let us pause here to consider several of the vital factors that had entered into American rail building. They were desperate measures and last resorts to avoid bankruptcy and total loss; but they opened the sluice gates to terrible evils that wrecked many a railroad during the next twenty years; and they have wrecked many a railroad in our own day.

Laborers' wages were paid in scrip to be redeemed in cash or goods at Baltimore banks and stores. If merchants had to accept doubtful scrip, you may depend on it they charged a price to cover the risk; for many of them had to redeem that scrip by taking shares in the company. That swelled the capital of the company.

Bonds were guaranteed, or backed, by city and state. No matter to what low price those bonds fell — and they fell far in panics — they demanded payment of full face value and interest, or the mortgage could be foreclosed. Then, low-priced, speculators could buy them and gain control of the road.

Contractors began taking payment in these nonsellable bonds. Is it human nature to believe that contractors, having to pay cash to their laborers and to wait years to realize cash on their bonds, would not charge the maximum for work to cover their risk and the delay in realizing cash? The next evil followed fast as a toboggan going downhill of its own momentum. To avoid having contractors " skin " the

roads by high charges or flimsy work, many directors became holders in these contracting companies — openly at first, secretly as the evils grew — and the profits to the contractors having first claim on the roads often far exceeded the profits to the shareholders; indeed, often prevented the shareholders getting any profits; and converted profits to dead losses. All that prevented the Baltimore and Ohio



Early B. & O. Locomotive.

The crudities of the early locomotive were only one of the many obstacles to the successful development of the railroads.

from falling an easy prey to these dangers was the magnificent integrity of its first founders and first directors. Many were Quakers whose "thee" and "thou" dot the minutes of the directors' meetings.

Great foreign financiers now became owners and directors of American enterprises. American rails could not have been built at the terrific and needed speed without such foreign loans, from 1848 to 1898. English investors were satisfied with three and four per cent dividends. Americans demanded six to

twelve per cent. In fact, many of the bonds so bought by foreigners — big banking houses, religious orders, insurance companies, little investors who took only $1,000 at a time — were not paid off by America until the World War.

But there were perils in this, both to the foreigner and to the American venture.

The distant investor cannot know local conditions. He may be frisked out of his ownership by repudiation of pledges by state, city, county. This happened in the South after the Civil War and accounted for much of the foreigner's sympathy with the South in that War. He knew that if the South won he stood a better chance to get his money back. If it did not, he stood to lose; and many did lose when the South collapsed.

Absentee ownership also gave rascals in the financial game, living in America, a chance " to wreck " what were called English or Dutch or French owned American roads. They could let the roads " run down at heel " so that the public would not patronize them. They could bar them from this, that, and the other terminal so that revenues fell off and the road had to be sold under foreclosure of mortgage at a song; but this comes into the later story of the great Baring Brothers crash.

Chapter VII

Boston Steps With Dignity Into The Rail Arena. 1830–1850

RECALL that the serious old Boston *Transcript* had warned the wicked world that the use of steam with its train of coaches, its "soft effeminate cushions causing easement to body and legs," would rob "passengers of manliness" and "death of half its terrors."

Now apprehensions more mundane roused Boston from smug lethargy. It was a lifting kick. When profits are on your side of the ledger, it is easy to be unctuous to one's own deficiencies and a flaming fire to the other fellow's. In an earlier day, when Boston was not quite sure whether tea was to be condemned by "the medicos," as "dangerous to morals," though her ships going to the North Pacific Coast did not stick at cargoes of opium from China for furs, Boston fired "the shot heard round the world" over a cargo of what? — Tea! So now Boston, taking a jump to the West, stirred up the slow-going Dutch of Manhattan Island and the canny Quaker of Philadelphia as to the direction in which the flag of steam was leading mighty forces — West. Boston had been the first to use a sort of dump car on rails with horse power and gravity up Bunker Hill. Then she lagged. Why? Because her schooners and whalers, slim of body as a fish and cloudy with great sail, gave her a false sense of security. She seemed to have leadership in ocean commerce. Weren't the New Bedford and Salem men sending ships to every port in the world? Didn't her

ships, both sail and steam, hold most of the coastal traffic from New England to Europe? More: didn't they handle and hold most of the outgoing and incoming traffic of Nova Scotia and Quebec? So long as she got the traffic, what cared Boston that her ships were building up Quebec and draining New York?

Then something struck Boston's prosperity a smashing blow. Somehow, when she staggered she didn't rally.

The War of 1812 blockaded Boston harbor. Her shipping fell to almost nothing. When peace came, though her clippers of the thirties and forties were famed the world over as swiftest of keel, they were not bringing her such great returns as the flood of traffic to and from the Ohio, whither pioneers were trekking in thousands. Round the world to the Pacific Coast was a long way west — six months generally; and here was steam from Baltimore tapping another West — a vaster West — all the way from the Ohio to the Mississippi and the Missouri. Michigan, Wisconsin, Ohio, Indiana, Illinois — the new territories — were coming into the Union like a fast multiplying family, with demands for every thing Boston had to sell. Real estate values were falling off in Boston as in New York. Merchants complained business was slack. Some docks were rotting from idleness. How about an air line to that New West?

Canals at Boston had been blasting in their disappointment. They did not pay. They could not. They were short. They froze up five months of the year.

When Boston began to dream of rails westward, her first idea of West was Albany; but her patriotic citizens would not subscribe for stock in steam rails. Why? Many charters had been granted in links of ten to twenty miles up to 1830. Why would Boston citizens not buy stock? Because profits were limited to ten per cent. All above ten per cent had to go to the State of Massachusetts, or tariff had to be lowered. Then with the Puritan repulsion to any kind of monopoly, nearly all charters provided that at the end of twenty or thirty years, the state could take over the rails at *its own* valuation. No matter how long investors might have to wait for any dividends — and some never received any — stock dividends were forbidden; and rail tracks were to be for free use by other vehicles. Who could be sure in a new venture that at the end of twenty or thirty years the investors would get back a dime for pooling savings in a sheer gamble?

Boston took a look at the map just as she had when she sent Gray around the world in 1789 and 1792. To the south were Connecticut and Rhode Island stalled from want of highways. New York's boasted route north and her canal route west up the Mohawk did not help Rhode Island and Connecticut one jot. Here to the north was Maine also stalled. Here to the west were New Hampshire and Vermont worse than stalled — sending what should come to Boston down to the St. Lawrence; and westward — ah — westward, here was route shorter in air line to the new inland territories than up one leg of a square —

the Hudson — and then along the other side up the Mohawk.

It is unfortunate for us that Boston now proceeded so secretly about the business of capturing Western traffic that we have few of the spectacular features of railroad growth which mark the same expansions from New York and Philadelphia. Cautious as always, the Puritan business man began his march westward one step at a time — by building links; then, as one link paid, hitching on another; then, as that air line round hills proved more a series of curves than an air line, where one link didn't and couldn't pay, putting that weak link between two strong links, and making the main chain pay for the weak loops. There is no use giving the numerous names of the links. They only confuse the mind. They became what we know to-day as the Boston-Albany and New Haven-Hartford. They illustrate then as now that consolidation of the weaklings with the strong was the remedy that forced big " through lines " before men's vision had grasped that big " through lines " were to be the steel girders to belt the continent. They also brought the rate snarls that entangle and confuse to this day. Freight rates didn't grow like Topsy. Neither were they made by rail directors. Nor could they be compelled by state laws. Those early state laws of Massachusetts charters had to be repealed because people would buy neither stock nor bonds without at least a prospect of profit. *What, then, created rates?* The individual needs of each line, as circumstances forced or new conditions arose. *That is all.* Investors demanded some profit. People along sparsely settled lines

needed steam rails quite as sorely as people in thickly settled sections.

One of the first theories that had to be given up was that railways were free common highways for anyone who chose to use them. Steam rails were not a common road in the sense of the wagon road. They were the property of the men who put up the cash to build them, and were open to the public who paid the toll for the service.

Of course, Massachusetts, like all the other amateur builders in the era from 1830 to 1846, had to learn by mistakes. Her next mistake was to build for eternity. She laid granite ties, only to find that such hard heavy roadbed in the bouncing of coaches, which as yet had no springs, tore coaches and engines to pieces as they rattled round curves; so these were gradually changed to chestnut and hemlock sleepers. Massachusetts was one of the first states to use heavier engines; but with Puritan persistence, she clung to different gauges. There would be one link six feet across from wheel to wheel, another narrower, another wider; and as the loops lined up in one system, the changing of these gauges to the present standard gauge of four feet eight and one-half inches, and the changing of the wheel width of engines and cars, enormously increased the cost of building the lines extending year by year from Boston to Albany, and via Connecticut from Boston to New York. Then, of course, Massachusetts rails had to keep charges more or less level with stagecoach and canal, at that time three to four cents a mile.

When we read that the little engines of eleven tons,

costing seven thousand dollars — or twice as much as the Baltimore and Ohio little steam puffers — were regarded as so extravagantly expensive that people had a doubt whether they could earn their cost and keep, we get a faint idea of the progress made in a century. There are lines to-day that trarsport the entire crops of a county's farms behind one Iron Horse.

Massachusetts lines learned that rates must differ in different territory and must differ in different seasons. It costs more to operate steam in winter than in summer; but in winter there was no competition of stages and rivers and canals. Should the rates be put up for winter, or put down for summer? One would give a great deal to have the minutes on that moot point, the opinions of the level-headed burghers behind the doors closed to the public. Unfortunately no such records exist. All we have is the decision. They lowered rates for the summer. They lowered rates for excursions. They lowered rates to two cents a mile to attract what we now call commuters; but they couldn't lower rates proportionately where there was neither excursionists nor commuters and the link line was not paying. This was between 1839 and 1843. Traffic doubled and then trebled. The burghers were justified. By 1843 — look at the fact, the figures can be found in any old state annals — the Boston to Albany line was getting more traffic than the combined rivers and canals in the United States.

At the same time, Massachusetts was pushing out lateral feeders up to Portland, Maine, through the

The first sleeping cars afforded few comforts. Heat was supplied by a stove, ventilation was poor, and there was a triple row of uncomfortable berths.

Until processes were devised to blast air, coal could not be used on early engines. Wood fuel necessitated huge smoke stacks that had to have hinges to duck under bridges.

The early railroad coaches were picturesque but uncomfortable. Down to 1839 two candle lanterns were the maximum for a passenger coach. There was no heat and no water supply.

hills of New Hampshire, north through Vermont to catch that traffic going to Montreal; yes, down through the Berkshires along the Connecticut border to capture what was going to New York by way of the Hudson. Boston had been hit hardest by the War of 1812. She was hurt least by the panic of 1837. Why? Largely because her rails were bringing in dividends and there was a growth of great factories to buy raw produce — wool, leather, hides — and to sell manufactured and imported articles in return to the Back Country. For a century, Boston benefited from this policy. New Hampshire was at first very unfriendly to rails. State law compelled rails to pay farmers their own value for right of way. That law killed all rail building in New Hampshire from 1830 to 1844, when the state, seeing Vermont shoot ahead in the growth of little rail and factory centers, repealed the foolish, impossible law. Boston by 1845 was actually getting Canada's half-yearly traffic when ice closed her one great natural highway up and down the St. Lawrence. This is one of the best examples of how rails have to ignore state, national, and political barriers. By 1850, New England had almost three thousand miles of steam rails radiating from Boston. Boston rails had seventy millions of private capital invested in steam; but if you divide that by the number of miles, you get a very inadequate idea as to the cost of each mile westward. There were those mistakes to be corrected. For instance, the link from Boston to Lowell in 1831 to 1837 cost easily $56,000 a mile. By the time the mistakes had

been corrected, it had cost $88,000 a mile, colossal for that day as it would be for our day. Again pause to realize the progress of a hundred years. There are in the United States, in 1929, almost six hundred thousand miles of motor highways, of which almost eighty thousand miles are paved flat as a floor. The common highway is built by taxing all citizens. The steel road is built by taxing its users and investors; and yet all the states of the Union are now spending a billion dollars a year on building public roads. This illustrates the immensity of our expansion in vision and effort in one brief century.

If you will look at a map, you will see broadly how the links were added "here a line and there a line, here a little and there a little, precept upon precept, line upon line," making one mistake one year, profiting by it the next year — and pressing, ever pressing forward in the divine urge westward. I call it a Divine Urge, because there is no other possible explanation of why men with one pay line on their hands should have annexed a non-pay line and then gone on with "the blind faith of little children." You may say the West was the siren that lured with promise of profits. It was, but it also lured with the certainty of immediate losses from enormous outlay and no profits for years. Yet the race westward continued.

There was the first link from Boston to Newton; then from Newton to Worcester, a long jump; then from Worcester to Springfield in a series of jumps; then from Springfield to Pittsfield, and Pittsfield to Chatham, and Chatham to Albany; and no sooner

was Albany touched than longing eyes were cast towards Buffalo.

At this spot New York awakened as from a fool's paradise.

Meanwhile, did it pay? How were stocks quoted? What were the dividends?

Certainly nothing to excite investors. The highest in this era is 196 for the Boston to Lowell link, and the next highest, 112, from Lowell to Nashua; the lowest from Vermont up to Canada, 21; these in good years. In bad years, the Boston to Lowell fell to 91, the Lowell to Nashua, 107; the Vermont up to Canada, to 12. Par was $100. A lot of investors must have lost cash and faith in steam rails. As to dividends — six, five, four, three per cent. Of the Masachusetts rails and branches, eleven had never paid a dividend up to 1854. There were about twenty-four links and laterals. New Hampshire, Vermont and the back country of Connecticut were the losing links. Some of those links are still losers, and the Interstate Commerce Commission is gradually ordering them off the map as the motor highway supplants their use.

Summarize the lessons Massachusetts rails had learned in a quarter century:

The free common highway theory had to be given up. The rail is a highway for common use, but it is owned by its investors and is not free.

You can back a rail with a state charter and give it the right (not guarantee) to earn ten per cent and add to that a monopoly over its own territory. The investor won't buy unless he is to own the property

in which he buys a share; and he won't buy unless he sees a chance of profit.

The idea of each link having a different gauge was both expensive and futile. There must be a standard width for all rails.

You can't make rates by law. Rates are made by different seasons, different territory, different character of travel, different bulk and weight of freight — factors that shift and change as seasons change, as population increases and decreases along the lines, as the weak must be absorbed for help by the strong; and if the weak are such complete parasites that they can neither become strong nor feed the strong, they must die. Law may prevent skullduggery and rascality in favoritism, but it cannot create rates. Rates are forced by necessity. It cost so much, for example, to run a train of freight cars. Was the freight to be charged by bulk, or weight, or service? Take as example bulky light hats, bulky heavy timber or stones, very valuable but very lightweight silks and teas, very average fruits but demanding speed and ice and heat according to the season — not so simple this freight charge business after all, is it? It is about the most complex, complicated thing inexperienced men ever tackled; and shifting with every season and every territory. Freight charges must be flexible as necessity on the spot demands. Take one modern example of that. There had been a great drought in one area of the West. Stock was starving for need of hay. It was costing ranchers seventy-five dollars a ton and they hadn't a cent to pay the freight charges on de-

livery. Just over a ridge of the mountains, there had been such an abundance of rains and hay that the farmers couldn't sell at twenty dollars a ton. They were glad to let it go at eight. Now, freights under modern Interstate Commerce Commission regulations are about as flexible to sudden needs as the laws of the Medes and Persians. The agent having more sense than fear of losing his job shipped that hay in quickly, at a rate below the regulation tariff. All that saved the agent from dismissal and the line from a fine was the fact the railroad went into a receivership and his insignificant sin was forgotten in the larger issue.

Massachusetts had learned that lower rates, fair in returns to the investor, can bring double and triple returns by creating prosperity along the lines.

All this may be very dull, but it is essential in order to understand how the steam rail became as much of an empire builder westward as had the Roman Empire. Those old wise-headed Boston burghers, of whose discussions and solemn arguments pro and con we have only the scantest records, did as much to open and hold and make livable the West, as Gray did to discover it, or Jefferson to buy it, or Lewis and Clark to explore it — and not a dozen of their names have come down to history. Hardly a figure stands out. Good old Puritans, with conscience on a hair trigger but feet planted squarely on the ground, they seemed to have followed the Biblical instruction that in " the multitude of counsellors is safety " and " he that hath knowledge spareth his words." It was really

the consensus of good sense and vision and daring that for a quarter of a century gave Boston the leadership in steam rails; and from that leadership came the capital and some of the best engineers, who from 1856 built Western rails.

AUTHOR'S NOTE

The New York Central, who have a nine hundred ninety-nine year lease on the B. & A., tell me there is not a single name left from this era.

Chapter VIII

How New York Lagged And How Order Came Out Of Chaos. 1826–1850

WHEN New York State had issued as many as forty-nine rail charters by the early thirties, and fifty-eight by the early forties, why had she lagged in adopting steam?

There were a lot of reasons. Most of them reached down to the pocketbook.

She was depending on the Hudson north and south, on the crudely built Erie Canal and Mohawk River east and west; but both iced during the winter. Even with steam power both were very slow on open water. Down the Erie Canal, an average of four miles an hour was fast; up the Erie Canal, an average of two miles an hour was not unusual. Then there were the delays of frequent stops both ways. Also, water will not flow up hill. The best canal on earth must more or less follow the windings of nature's water courses. The rail can follow what is closer to an air line.

When the canals were blocked in winter, the stagecoaches resumed for passengers and the farmers' wagons for freight; and the stagecoach stocks were selling at 200.

It seems impossible to credit the next obstruction. Every tavern wanted to retain passengers for the night at its own local point. For instance, what was deemed a hopeless barrier lay between Albany and Schenectady. A hump of land rose almost two hundred feet on the Hudson side. As the Boston and Albany came pushing westward, the shrewd Dutch-

men in Albany chuckled. That would make Albany " the net " to catch all the flies; but steam on rails has a way of doing things quite unexpected. Those shrewd Dutchmen suddenly wakened pulling their whiskers. That Erie Canal on which they had pinned their hopes was feeding traffic direct into Boston. I don't suppose they cared a particle about hurting New York; but they did care about not getting so much traffic up the Hudson from New York. It was really what one writer describes as " the call of the West " that alarmed Albany. Traffic breaks through all man-made laws for the shortest distance between two points.

When the advocates of steam suggested getting over that hump between Albany and Schenectady by either a gravity road or a series of planes, the Dutchmen didn't believe it could be done because they didn't want it done. This explains why so many charters were granted for rails between 1830 and 1840, but all had some clause tacked on that made it impossible to get cash subscriptions to the stock. If the private enthusiasts for steam would not put up cash, why should the state?

One law prohibited the entrance of a steam-driven vehicle within the city limits of Albany and Buffalo. Not safe — was the reason given. Taverns, teamsters, coach lines, canals were the real reason. Right of way, fences, grades, ballast, ties, tracks — were laid down in other charters. This was sheer blindness to the plain fact that building must be determined by two local factors — what is found best by experience for

each particular area; and what is found best can only be provided as subscriptions to the stock and revenues from the road come in. If Albany could hold all passengers for a night, why not Utica? So Utica, too, was hostile to a through line. If Albany with a population of thirty thousand could become a great travel center, why couldn't Utica with a population of only six thousand? All the towns close to the canal wanted the rails prohibited from carrying freight. All the towns off the canal wanted the rails to carry freight. But the canals were prepared to die hard, if they had to die. They cut rates to the bone, and canals had state support; so the first rails carrying passengers had to charge the same rates — about three cents a mile. To this they did not object; for they knew they could make up deficiencies in canal travel by speed and frequent trains; but when to this handicap was added — as it was in several charters — that anything earned over ten per cent was to be paid in a rebate to the canal, the buyers of stocks became gunshy. Then when certain short rails were allowed to carry freight, they could carry it only when the canal was not running. As if these laws were not sufficient strangulation to kill by regulation the baby rails, there was added in other charters the right, at the end of five, of ten, of twenty years, for the state to take over the rails at exactly the cost. What was to be given the investor, who had waited all these years for some returns, was left in the air, too vague for any man in his senses to risk savings.

Was it any wonder the one hundred rail charters

fell dead? Was it any wonder New York City, a metropolis of two hundred thousand souls, began to wonder whether Albany with thirty thousand had any right to block progress and divert the profits from Western trade to Boston? Was it any wonder New York City was the first to take up seriously the business of overcoming that hump between the Hudson and the Mohawk from Albany to Schenectady? Manhattan Island had cost the Dutch about twenty-four dollars, or six acres for one cent. Was Manhattan going to see Albany and Boston and Baltimore capture all Western trade? It was not; and here comes into the story a new type of man in New York rail building, — the empire builders with vision — men who could see beyond their own noses; not unselfish, in fact, utterly self-seeking, but realizing you can't build up a great country by permitting one little section to grab all the advantages — such names as the Catlins, merchant bankers, John Jacob Astor, aging and infirm in health but alive to what the West might mean to New York, the Duanes, the Jays, the Fish family, the Dominicks, the Griswolds, the Devereaux', the Benedicts, the Cornings, the Marvins, the Van Andas, the Delafields, the Schermerhorns, the Lathrops, the Whitehouses, the Clarkes, the Goelets, the Roosevelts, the Hammersleys, the Fargo family, and others whose names have passed into oblivion except on little street-corner signs in Lower New York. Nor is it surprising how few purely Dutch names are in this list. The Dutch were pledged to Albany. The rail support came from the merchant-banker class in New York

City and such Western New York cities as Binghampton, Schenectady, Rochester, Utica, Syracuse — old colonial stock, whose ancestry had pressed up the Mohawk when every mile forward cost either their own life or an Iroquois'.

And it is perfectly natural the first big push for a railroad to overcome that hump between the Hudson and the Mohawk came from an English landowner in Upper New York. The Englishman knew how rails were succeeding in England and he was free from all the prejudices of the Dutch, who, coming from a land of canals, just as naturally pledged their faith to canals.

George Featherstonhaugh was a rich landowner of Schenectady County. He had been the author of that advertisement in 1825 for a rail charter, when the cost of the insertion in the press was " to be $1.56 " if it succeeded, " nothing " if it didn't. The road was to be the Hudson and Mohawk. Its capital was the modest sum of three hundred thousand dollars. Only three dollars down was to be paid by subscribers and the rest as capital was called up to one hundred dollars par. Catlin, the New York banker, was to receive the subscriptions. The law made the shareholders personally liable for all debts and provided that within five years the state might take over the whole concern with certain repayments to investors less all revenues they had received. If successful, the investors might lose all benefits; if a failure, they could gulp down their losses. Of course, such a charter had to be amended, but in the meantime Featherston-

haugh, with his wife who was a Duane, went to England at his own expense to study steam on rails. "Only seventeen days crossing the Atlantic," he wrote enthusiastically. So three years passed. The directors — Van Rensselaer, Featherstonhaugh, Fish, Astor, Catlin, Jay, Duane — met on his return at the old Bank Coffee House. Astor was too ill to be active; but it was figured the little road from the Hudson to the Mohawk — fifteen miles — would cost from two hundred seventy-five to three hundred forty-three thousand dollars; so it was self-evident the capital of three hundred thousand dollars would have to be increased to five hundred thousand dollars. This sent such a chill down Van Rensselaer's spine that when the first three dollar assessment was levied he began to back away. Many other subscribers followed his example and put up only one dollar of the three dollars called. Then, three members of Featherstonhaugh's family dying within three years and his mansion being destroyed by fire, he had to move to Philadelphia; with his moving, the spirit of enthusiasm departed from the Hudson and Mohawk. Surveys went on all through 1829. Mr. Jay chilled so that he resigned. It took until 1831 to call in all the assessments up to par. It must have been like pulling teeth, for they came in fifteen different desperation calls. Albany and Schenectady had gone cold. More than five thousand of the original shares had changed hands; but the New York crowd never let that stock sag. It had dropped to 30 in 1831, but marched up to 171 within the same year and later to 196. New York

made much the same mistake as Massachusetts — too heavy a roadbed. Iron for the strap rails was brought from England; and that added to the cost. A path was left for horses in case steam failed. This gives a fair idea of the faint faith in steam as a power. When the final demonstration was held — the *De Witt Clinton* engine drew three coaches, a horse drew seven coaches; but, unlike the Baltimore and Ohio race, steam won. The engine made the trip in forty-six minutes; the horse in seventy-five. Down grade back, the engine made the race in thirty-eight minutes, the horse in sixty-eight; but for that winter of 1831–32 the engines were taken off and horses used. The little *De Witt Clinton,* which had been built in a foundry in New York, can be seen as a curiosity in the Grand Central Terminal. It would be laughable if it were not pathetic — hardly seven thousand pounds in weight, eleven and a half feet long, with four wheels, a horizontal boiler, and a smokestack like a mill chimney. The tender came behind with barrels for water and space for wood, and an awning above to keep the trail of sparks from burning the wood. On each passenger car sat a conductor like the whip of a coach, and the directors inside wore such tall plugs to dignify the occasion that every jolt bounced both the passengers and their hats to the low ceiling. It was so low, one could not stand erect without a crack on the crown. On that occasion — and many subsequent ones — a rail fence was purloined and split up and bound to the three-link chain coupling to prevent one car telescoping another down

THE FIRST LOCOMOTIVE AND TRAIN OF PASSENGER-CARS EVER RUN IN THE STATE OF NEW YORK

The American Locomotive "De Witt Clinton," Mr. David Matthew, Engineer.

The diminutive *De Witt Clinton,* which made its maiden trip in 1831, was only eleven and a half feet long and scarcely seven thousand pounds in weight.

grade. Anyway, the *De Witt Clinton* and its brother engines were doctored up that winter so that the next year they could repeat the astonishing feat of thirty miles an hour. The *De Witt* was called "a beautiful light race horse" compared to its poor "elephantic John Bull," brought from England and early relegated to the junk heap. Henceforth, the Hudson and Mohawk built their own engines at home. By 1840, engines were costing round seven thousand dollars.

The John Bull, 1831.

"The elephantic *John Bull*" was imported from England, but it proved to be too heavy for American tracks. It shows the use of combined upright and horizontal boilers.

It was necessary to assess the investor twenty dollars a share to buy out the old turnpike; and one hundred fifty thousand dollars of new stock had to be sold at auction in New York to provide working funds. As this stock sold at 128, faint faith was flickering up. We have gone far in the progress of steam in a century. To-day, over that same rail highway and many others dash locomotives carrying fifteen thousand gallons of water and twenty tons of coal fed by automatic stokers; and within the immediate future, five hundred miles of the same system will be run by elec-

LOS ANGELES MUSEUM
EXPOSITION PARK

tric power, increasing the haul of cars both freight and passenger double for one engine and one train crew, and eliminating boilers and tanks except for heating coaches.

Do you realize how closely the Hudson and Mohawk was still shaving an abyss? Coaches were running, engines were working, the roadbed was laid, people were traveling; but there were no passenger stations, no freight warerooms, no water tanks, no permanent supplies of fuel; and no one knew what the revenues would be. Any modern rail man shaving risks so close would have white hair in a night. The railroad was fined three hundred fifty dollars and thirty dollars in sheriff fees for laying tracks inside Albany limits. Schenectady was not so hostile. It hoped to become a second Albany. Albany hoped it wouldn't. The railroad had to charge the same rates as the Erie Canal, though the Erie froze up in winter and the cost of operating steam was higher in winter. By 1839, the railroad had to apply to the state for a loan or guarantee of bonds to the extent of three hundred fifty thousand dollars to meet its debts. It was charged stiffly for its loan — seven per cent; and repaid every cent. Part of this loan of credit went for extension to Troy and was obviously granted for just one reason — to keep Boston from getting Western Erie Canal traffic. The railroad was still jealously regarded as only a link — a necessary evil — between sections of water.

I cannot give the names of the magnificent New York men who, having put their shoulders to the

wheel, would not in evil days let go; but the Mills family comes in here. Anyway, by 1843, the company could borrow money at five per cent and they borrowed one hundred twenty-five thousand dollars and never repudiated a debt; by 1844, they borrowed another one hundred twenty-five thousand dollars. Most of these sums were for depots, double tracks, sidings, heavier iron rails; and they pledged every cent of their own stock as security. The Hudson and Mohawk going over a waterless hump was never forbidden to carry freight but it was held down in charges to a level with the canal. The canal could not climb that hill and it could not operate in winter; but steam was by law compelled to charge no higher than the canal. In seven years, the actual profit on freight was $3,926.15 — less than six hundred dollars a year — the wages of a scrubwoman in a car to-day. The superintendent of the line was receiving fifteen hundred a year, later raised to twenty-five. The presidents and directors of the company up to 1844 never received a dime for services. After that, the president got twenty-five hundred a year for giving all his time to the Hudson and Mohawk. Not a dividend was paid for five years, and the first twenty-five thousand dollars in 1847 — came from passenger fares. Steam had beaten canal on canal terms. From 1850, when most of the obstructing laws had been repealed, net income ran from four hundred thousand dollars a year up. By 1853, one million eight hundred thousand dollars had been spent on the road, six times its first estimate. Overdrafts at the banks often ran to one

hundred thousand dollars. Bonds were peddled round to bank customers, one bond at a time; and every bond had the right of conversion into stock. Seventy different New York directors changed in less than a year. The difficulty in raising cash to meet daily demands proved nerveracking.

The story of the Hudson and Mohawk is typical of the other links to Buffalo. These links cannot be tabulated as definite plans to reach the West, which the Baltimore and Ohio links were. The rails along the Erie Canal were rather the expression of the desperate needs in each locality for an outlet to market. They were really examples of freight back-flooding with ruin the producers and merchants, though they paralleled the canal so closely in spots as to be able to drop a stone in its waters.

The Utica to Schenectady was the next link. It was chartered in 1833 with the ample capital of two millions for its seventy-eight miles. Fares were fixed at four cents a mile for passengers, but on no account was anything but baggage to be transported as freight. Also, the railroad must buy out the turnpike people at twenty-two fifty a share. The one exception to the carrying of anything but baggage was mail. Subscriptions were received in New York, Albany, Schenectady, Utica, in amounts of five dollars; and they came in full at first call. The first officers — president, vice-president, secretary, treasurer — served for twenty years without a cent for services. The head engineer drew twenty-five hundred a year salary, the acting superintendent two thousand — which isn't

The *De Witt Clinton* that so astonished the people of New York on its trial trip was a ridiculous toy compared to modern standards. Tent awning covered the coaches which were carriages adapted to rail, the boiler was upright, and fuel was wood which sent clouds of sparks and smoke back upon the passengers.

far different from salaries to-day when you figure the buying power of the dollar.

Nor was so heavy a roadbed laid as earlier, but a much heavier type of iron strap was spiked on the rails. This was one of the trends to iron for rails, and later — steel. Baldwin was the builder of the first six engines. Still steam was not entirely trusted, for barns were erected at each water station. While this sop of conciliation was thrown to teamsters, the directors insisted the teamsters must give them a fair deal, and they exacted free sites from each hamlet, where stables were provided. This is one of the first instances in American rails where free sites were demanded. It was wise at the time, but proved the thin end of the wedge to the evils that followed later from the practice of ditching a town that would not donate a free site and then having to go the long way round through a free site.

The road was opened on August 1, 1836, with two trains of ten coaches each. It was the biggest day in Utica's history. There were three hundred passengers and receipts were four thousand dollars for fares both ways. Of the capital almost one and a half millions had been spent and the balance was to double-track certain sections. The first dividend came in 1837 — five and a quarter per cent. The Utica and Schenectady was one of the first lines to adopt rules for conductors — trains west on north track, trains east on south track; trains to run on strictly schedule time, the conductor's watch set with official clock at Schenectady; work trains give way to passenger; if

a train broke down, a flag man must be sent back eighty rods with flag by day, lantern by night; trains must be run at least ten minutes behind a preceding train; a bell must be rung eighty rods before reaching all crossroads, stations, switches; and lamps must be suspended to the rear of all trains at night; one-puff whistle, tighten brakes, two-puff, loosen, continuous long whistle, a station; a brakeman must be stationed at the rear of each train; no riding permitted on engines by strangers; badges must be worn by all train officers; a white flag the signal "all is right"; a red flag or light, "stop"; a light swung out to side of train, "stop"; a violent wave, "stop instantly—danger"; a swing above the head, "back up"; a horizontal wave, "go ahead." Owing to excellent management, the Utica and Schenectady could pay dividends of from ten to eighteen and one-half per cent.

Order was emerging out of an almost universal chaos.

The story of the other links of steam rails on to Buffalo is not very different from the early experience of the Hudson and Mohawk, or the Utica and Schenectady. The Syracuse and Utica was allowed to carry freight by its charter of 1836, but had to pay the tolls to the Erie Canal on freight carried during open water. The road opened in great jubilation on July 3, 1839. Bands played as the trains "whirled off to Syracuse through a dense forest over morasses and swamps." The company carried passengers free for one week to get people going by rail in preference to

canal and turnpike. The dinner given to five hundred people in the Syracuse hotel might be suspected of sinister purpose to increase the weight of the passengers if it were not that charges were restricted to four cents a mile. The road did not receive one cent of state or city aid. It was fifty-three miles long. It passed through a territory "with wealth"—as a contemporary record reports—"beyond the dreams of avarice." Piles were driven to bridge the swamps. Stone foundations had been tried and discarded. Operating expenses were held down with an iron hand and free passes were discouraged from the first—"not a dead head to-day" reports one conductor. Another day the "dead heads" were given as "a poor blind man and boy," "a poor immigrant woman and infant," "a crazy man," "two mutes," "a lame man." "Passengers were forbidden standing on platforms or getting on and off cars in motion." The Schenectady and Utica also drew attention to another fact which our Supreme Court only tardily recognized in 1927. A rail train could not get off its tracks for an intruder. Therefore, if farmers would drive cattle along the tracks or attempt to dash over a crossing before a train, the damages must be on the intruder, not on the rail company. Earnings for the first six months were now ten per cent over all costs. I cannot find whether they were paid or conserved against less favorable seasons. Anyway, returns came in at the average of six hundred dollars a day.

From Syracuse to Auburn was twenty-six miles,

VIEW ON THE HUDSON RIVER RAILROAD.

The progress achieved during the decades succeeding the memorable trial trip of the *De Witt Clinton* is obvious from this print. This engine and its coaches represent the intermediate stage in railroading.

and in the panic of 1837 a great deal of its four hundred thousand dollar stock was picked up by the New York people who were behind the Hudson and Mohawk. The road floundered into bad financial whirlpools. Drafts to pay for construction went to protest. There was no cash. Subscribers could not pay their assessments. The state came along with a loan of one hundred thousand dollars and in 1839 permitted a charge of five cents a mile for passengers. "I am almost in despair," wrote the desperate treasurer. "Is there no sale for the stock?" *The company had to issue I. O. U. notes for as small as five dollars.* It was jolting along to completion very much as a poor man buys a second-hand motor to-day by payments of five dollars at a time. Naturally, the state, forced to extend loans, saw the necessity of permitting the rails to carry freight but *only when the canal was closed.*

The Auburn and Rochester Road — seventy-eight miles, chartered in 1836 — began with the right to carry passengers, but freight only when the canal was closed; and passenger fares were held down to three and four cents a mile. A great many subscriptions to its two million stock failed to come in during the panic of 1837. The cost exceeded the capital by more than six hundred thousand dollars. It was on this railway that the leg of the lady passenger was "bitten" by "the snake head strap" coming up through the floor of the coach. By 1840, another appeal to the state was made to avert bankruptcy; but even state guaranteed stock — two hundred thousand

dollars — could not be sold at any price. Nevertheless, through trains were running by 1841. Poor lame duck among all the rails of the era! It had come through a panic and was just stumbling along on its groggy steam legs when public indignation assailed it in a furor. " It was the worst managed road " in the country. Mails were late, trains were late, equipment had the rickets, the roadbed rocked to every train — away with the scapegoat! Solely to hold and induce investment, nine dollars a share was paid in 1842 as interest — not dividends — on subscriptions from 1836.

Anyway, in spite of all these tribulations, order was again coming out of chaos. The Auburn and Rochester began to see that if it could hitch up to the other links from the Lakes to the Hudson, it might have a chance to survive. It began selling through tickets. Sectional feeling was giving way, if not to a national outlook, at least to a state outlook.

For those who are interested in the scale of pay in 1840, the superintendent and construction engineer got three thousand dollars a year each; the conductors six hundred; the freight agents, four hundred eighty; the baggage men three hundred; the engineer from seven to eight hundred.

The Rochester and Syracuse was really an 1850 consolidation of the Auburn and Syracuse with the Auburn and Rochester with over four millions capital: double the stock of the two united companies; but nobody shouted " watered stock," for there had to be more stock sold to avert bankruptcy; and it is

pathetic to relate that of the stock so offered, the public bought only $8,340. I don't know how both roads wriggled through this squeeze, for there is no record; but wriggle through they did — probably by selling privately to the New York banker groups behind the other links of the chain from Albany to the Lakes.

How do we know that extra two millions was not a gratuitous bonus — or " watered stock " — to those banker groups? Because the final completion of the line was $2,026,339.95, or twenty-six thousand more than the extra two millions taken over and financed in New York. This is a very important point and should not be ignored: the charge has been made again and again that " water was squeezed in the whole system " at this period for which the public had afterwards to pay tolls and dividends. We shall meet plenty of " watered stock " before we finish with the story of rails; but this was not one of the cases. Notes given by the company at this time went to protest from five dollars up to one hundred thousand.

The Tonawanda — forty-three miles, chartered in 1832 — got under way for trains by 1837 and fortunately all its five hundred thousand dollars was subscribed before the panic. Largely because the farmers along this line were big shippers of wheat, it was unhampered by foolish regulations as to canals and turnpikes. The first train was hailed with the wild jubilation that greeted Lindbergh's flight across the Atlantic:

"When we reached the Depot the engine was snorting like an impatient war horse; and at a given signal, it sped forward "like a thing of life." Hearty cheers from the multitude scattered along the line of road greeted its magic progress, and gave a thrilling animation to the scene.

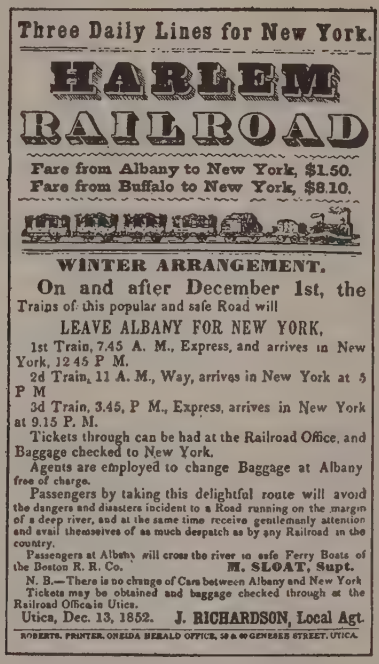
"In 40 minutes we were at Churchville. Its inhabitants gave us a cordial welcome. As we bade adieu to their kind gratulations, the waving of the 'kerchiefs showed us that the ladies also participated in the hilarity of the scene, and appreciated the important influence which the Road would have upon the prosperity of their pleasant village.

"At Batavia was animation. The Road for a mile was lined with citizens. The cheers were long and loud, and the thunderings of the cannon, called into requisition on this occasion, responded to the "three times hoorah," which was elicited from the cars by this grand reception.

"At the place of landing the company were reviewed by the corporation and a Committee of citizens of Batavia; and escorted to the Eagle, where, in due time, a most sumptuous dinner was served by "mine host" Mr. Smith. To gratify the palates of his guests, and to add to his own good name, he seemed to have monopolized the choicest delicacies of earth, air and water. Fresh salmon, white fish and shad — wild ducks, snipe and pheasants — new radishes, salad and cucumber — were among the luxuries of the table."

Nevertheless, the company had to increase its capital two hundred fifty thousand dollars in 1844 and to increase its rate to four cents a mile to replace rails. The damp climate closer to the lakes rotted the

wooden rails. The railways were gradually working to iron for rails, then to steel; but the replacement of rails taught all steam companies that *a railroad is never completed.*



Three Daily Lines for New York.

HARLEM RAILROAD

Fare from Albany to New York, $1.50.
Fare from Buffalo to New York, $8.10.

WINTER ARRANGEMENT.

On and after December 1st, the Trains of this popular and safe Road will

LEAVE ALBANY FOR NEW YORK,

1st Train, 7.45 A. M., Express, and arrives in New York, 12 45 P M.

2d Train, 11 A. M., Way, arrives in New York at 5 P M

3d Train, 3.45, P M., Express, arrives in New York at 9.15 P. M.

Tickets through can be had at the Railroad Office, and Baggage checked to New York.

Agents are employed to change Baggage at Albany free of charge.

Passengers by taking this delightful route will avoid the dangers and disasters incident to a Road running on the margin of a deep river, and at the same time receive gentlemanly attention and avail themselves of as much despatch as by any Railroad in the country.

Passengers at Albany will cross the river in safe Ferry Boats of the Boston R. R. Co. M. SLOAT, Supt.

N. B.—There is no change of Cars between Albany and New York

Tickets may be obtained and baggage checked through at the Railroad Office in Utica.

Utica, Dec. 13, 1852. J. RICHARDSON, Local Agt.

ROBERTS, PRINTER, ONEIDA HERALD OFFICE, 58 & 60 GENESEE STREET, UTICA.

As early as 1852 the trip from Albany to New York was made in five hours.

The law of 1847 required the laying of iron rails. Now iron rails had to come; but to force them faster than revenues warranted was a staggering burden. Stockholders went down in their own pockets for six hundred thousand dollars.

The Utica-Buffalo — thirty-one miles — and the Rochester-Niagara were the last links of the iron chain forged from Albany to the Lakes. Not much need be told of these lines except that in 1841 contractors took pay half in cash, half in stock. They do not seem to have "padded accounts" and overcharged; for the cost was only from five to eight thousand dollars a mile; but then there was that foolish requirement to pay canal tolls during closed water. Buffalo, being Western headquarters from New York to the Lakes, was very hostile to rails. At first she would not permit a steam engine inside the city limits. When you consider what rail and water combined have done to build up the Buffalo we know to-day — that city regulation is laughable.

Rates were so variable along all the links as to be unexplained — from six cents a mile between Schenectady and Troy, to three on other sections — unexplained except that the sinister hand of politics had intervened.

By 1851 all tolls paid by the rails for the benefit of the canal were abolished by law.

Right here let us take a look at national and international affairs to see how they reacted on American transportation. Germany was in the middle-century era of her struggle for liberty and "the sons of 1848" were pouring to America in flood tides. Of these, the farmer class was pushing West and the New York and Baltimore systems were ready for them. Their fares swelled the revenues of rails westbound, and their produce from farms in the West and

Middle West swelled the traffic eastbound to Seaboard and to the Eastern factories which bought their raw material and again shipped much of it back to the West and Middle West. This class of colonist made the backbone of the great Central States we know to-day. The few Germans who remained in Eastern cities, became the great class of bankers and importing firms.

Ireland was suffering from both famine and misgovernment; and millions of Erin's sons were flocking to America as the land of plenty and the land of the free. The most of these came penniless except for their fare across the Atlantic. They were compelled to take the first jobs that offered; and the first jobs that offered were physical labor in the Atlantic cities now going ahead in population by leaps and bounds and on the rails now racing Westward. The Irish-American became first the unskilled worker in the cities, then the contractor, then from 1850 to 1880 — a political power. He became on the rails the grader, the shovel and pickaxe brigade, then contractor and, in not a few cases, the president of the rail on which he had begun as " shovel stiff." He was riotous. He was merry. He was lawless and hard to control except by his own compatriots; but he worked like a demon. He made " the dirt fly "; and to him we owe in this era much of our rail building. Also he was dauntless, quenchlessly ardent, and boundlessly ambitious. He was thrifty, too, and determined to go up; and he injected a tremendous impetus in American life.

As the German colonists added to the freight traffic

of the rails, the Irish colonist now provided the rails. The banker class both in America and in Europe had to provide the capital in the pooled savings of German and Irish to oil the wheels going forward.

Last but not least were two other factors. Oregon was now definitely United States territory. The rush to Oregon, which began in 1842–43, did not abate till the Civil War. It began as a religious missionary movement. It ended as a great migration — one of the greatest mass movements of people the world has ever seen. As the foreign colonist came in and bought cheap Middle West land, the pure-blood American pitched comfort to the winds and trekked to Oregon — two thousand miles. Next, gold had been discovered in California; and the West became known as the Pacific Coast rather than the Mississippi Valley. Men of every race, of every nation, of every station in life, dashed for the gold diggings in a mad stampede, though there was not a rail to carry them beyond the Missouri till after the Civil War.

So many contemporary factors geared rail construction up to a pace too fast and too costly for its own good.

PART III

The West Moves From The Lakes To The Prairies

Chapter IX
The Arabesque Of A Magic Carpet
1826–1850

DID the child ever live, who did not at some time dream of the Arabs' Magic Carpet woven in strands of silver and gold and blue and green on a background of dark velvet texture, which came floating out of Nowhere Land and wafted in a jiffy to the Land of Desire? And as we grow older we sigh — What a pity we can't retain forever those childish fancies! Why must the hard facts of life shatter such dreams to a cynical distrust of everything but hard knocks as teachers?

And yet — try to think back to the fancies of youth! Try to think back to the youth of a nation, when no sky was too high for airy flight. Imagine such a child of 1828 being sent up in an aeroplane of 1928! What would he see as he looked down and back behind the flight of a brief century? I mean, what would he actually see, not just fancy?

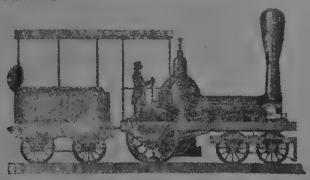
Between ridges of forested mountains on the Atlantic side, slopes of densest green, forests like velvet, little silver strands of water glistening and wimpling and gliding towards the sea, with two rails of silver small as threads in a mosaic carpet running along parallel with the shining rivers; and where the rivers dwindled and lost themselves in the velvet green forests, the two silver threads would run on up the slope, or disappear for a moment in a black hole through the rocks to come out on the other side with a puff of steam white as fuller's fleece. Between the Alle-

ghanies and the Mississippi, the magic carpet would change in its texture. Not so many velvet forest slopes — but bigger rivers, broader strips in the pattern of a wonderful weaver, but still the two little silver threads with the puff of white wool; and where stream crossed stream, or silver threads interlaced with other silver threads, little houses like a child's blocks and, in the passageways between the houses, little boxlike playthings on wheels with the swiftness of fleas and little people hopping out of their way like colonies of disturbed ants. In a contest between ants and fleas, I am not sure which would win; but I do know that up to 1928, most human ants prefer to hop out of the way of motor-car fleas. If it were summer, our airy traveler would see the most amazing arabesque of green corn and golden grain in patches from the Eastern ridges to the Mississippi.

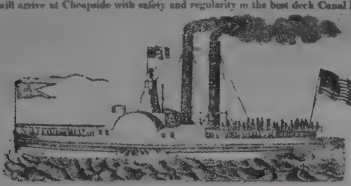
Does the allegory need to be spelled out to the dullest sophisticated mind that ever lived? An aeroplane traveler would have to be blind not to see. Was then, the childhood dream of a magic carpet true? Yes; it was true. It came true in a century's weaving by a wonderful shuttle. What made the dream come true? Just what makes all good dreams come true: knowing first or, if not knowing, finding out by "wit-ty inventions" — that is, inventions that required wits, lots of wits; then a will to do — willing so hard nothing could stop the will; then daring to do — daring so nonstop that, if a mountain lay in the way, it was torn out of the way; then doing — which sounds simple, but it wasn't any easy walkaway. It

NEW HAVEN AND NORTHAMPTON
DAILY
CANAL BOAT LINE,
AND
STEAMBOAT TO CHEAPSIDE.

The New Haven and Northampton Canal Transportation Line have extended their line of Boats to Cheapside, by adding a Steamboat to run from Northampton. They have also a Steamboat running in connection with the above line from the Basin Wharf in New Haven to New York.



By this arrangement Goods shipped from Albany and Boston by the Western Railroad via Westfield Depot, and from New York and the South via New Haven, will arrive at Cheapside with safety and regularity in the best deck Canal Boats.



The Steamboat Franklin will leave Northampton for Cheapside landing, on MONDAY, WEDNESDAY, and FRIDAY. Returning, leave Cheapside landing on TUESDAY THURSDAY, and SATURDAY. The Steamboat SALEM will leave the Basin Wharf in New Haven for New York, every MONDAY and THURSDAY at 9 o'clock P M. Returning leave Old Slip, New York, every TUESDAY and FRIDAY, at 5 o'clock P M. For freight or passage inquire of *J & N. BRIGGS*, No. 40 South Street, New York, or of *N. J. BACON*, New Haven, or of the Captain on board.

Freight from Boston and Albany will be delivered daily at the Brick Depot, Westfield, and transhipped without delay in the canal boats for Northampton and Cheapside landing, near Greenfield, and in connection with

BEECHER'S DAILY LINE FROM NEW HAVEN,

the present arrangement affords facilities and dispatch hitherto unenjoyed.

The rates of freight generally have been reduced, and Flour from Albany via the Western Railroad, will be delivered at Northampton, *for 34 cents per barrel, and from Albany to Cheapside landing for 40 cents.*

For further particulars inquire at the store house west side of the Deerfield Bridge, at Cheapside, of JOHN R. BOYLE, HENRY BEECHER, New Haven, J. & N. BRIGGS, No. 40 South Street, New York, or of the subscriber at Northampton.

JOSEPH L. KINGSLEY, *General Agent.*

Northampton, April 1, 1845.

This broadside indicates the rapid progress of steam transportation on land and water by 1845. This development took place in less than fifteen years after the famous trial trip of the *De Witt Clinton*.

In the old-fashioned Pony Engine passengers rode in a curious top-heavy cabin built over the boiler. This photograph was taken at the old Rochester Station.

The discomforts of night travel in a day car in the 'fifties were numerous. According to the cartoonist who drew this sketch for *Harper's Weekly*, such a spectacle gave George M. Pullman his inspiration.

took muscle, it took brain, it took brawn and blood sweat, it took patience, it took faith. Then keeping silent and letting results speak. And behold there was the magic carpet from a century's shuttle. I ask myself, is there any great dream of the human mind too high for the sky?

I don't know whether it was because the Quakers did not like fairy stories, however much they trusted mystical visions and dreams; but I do know that though Boston and New York and Baltimore were making dreams come true, for some reason or other Pennsylvania hung back on steam.

New York had not stopped with the spanning of all obstructions from Albany to Buffalo. As the Albany to Buffalo links were growing yearly from 1825 to 1850, she was trying out many other short lines with steam. These were chiefly short lines as feeders to her city. Look at the map again! The State of New York is very much like a flag pole with flag flying west to the Lakes, and the great seaport city at the bottom of the pole. By the Albany to the Lakes line, she had provided a strip of highway westward right across the top of the flying flag; but she had not yet sent a rail up parallel to the flag pole for the winter season, when the Hudson lay frozen. It was perfectly natural that line of travel should occur to the city up what is now known as the Harlem, or border between New York and Connecticut; for down that road came the beef cattle and milk and food from the upper state to feed the city now growing from two hundred thousand so fast it could hardly provide its

own needs. The entire population of all the states in the Union was little over five million when rails began to be built. By 1840, it was nearly fourteen million; and New York State alone numbered two and a half million. It was natural New York should look up the Harlem first, or parallel to what was the Boston-New York turnpike road, because from Fourteenth Street north was a suburb of farms through which the public roads were pig wallows of mud in mild weather and deep ruts of ice and drifts in snows.

The Harlem was first planned as little more than a city tramway from seven to fourteen miles as funds could be raised to build; and the building was enormously expensive. It cost $137,500 a mile. Right of way had to be bought through suburbs. Farmers, teamsters, post roads fought it. Berkshire Hill towns on the post roads thought it would have to come round their way either on the Connecticut post roads or on the New York post roads and put figures for sidings and depots up so high that the Harlem surveys advised running between these two post roads. Their advice was followed with results of a century's decline to these old post road towns; but that did not come all at once. People gradually moved away.

The charter was given in 1831 and the road opened for four miles in January, 1833, when the Hudson lay frozen. The plan was to go right up from the City Hall to Dover Plains, then on to Chatham, where connections could be made: west up the Mohawk, east to Boston, and north to Montreal; but the cost had been so enormous that it had to increase its capital

New York City eventually solved the problem of bringing trains into the heart of the city by sinking the tracks of the New York and Harlem Railroad. This old print shows the open cut at 126th Street.

from three hundred fifty to seven hundred fifty thousand dollars, and when by 1839 it had added seven more miles, it had again eaten up its capital and had to double to build to Chatham by 1852. The panic of 1837 was possibly a good thing for the Harlem. It kept it, in railroad parlance, from "growing too fast for its breeches." It did not grow faster than money came in. It was one of the most profitable lines ever built. Even in the panic era its stock seldom fell below 45 and 36.

But New York's high hopes for checking the flow of wealth north to Montreal by Lake Champlain were knocked hopelessly on the head by that panic. They were not fulfilled until late in the fifties. Meanwhile little feeders were pushing over Long Island from Brooklyn. These were built too much as tramways to come into the essential story of steam on rails; but they do prove that, even competing with open water where ferries and schooners and steam on water were usable twelve months of the year, and thick as gulls on wing, steam on rails was quicker, more frequent, more dependable; and the best service in Long Island and on the Harlem was a thing to make patience weep. Time tables were printed but not followed. Local stops had not been worked out in terms of time. Loading and unloading, mixed trains for passengers and light freights, lack of sidings for trains to meet and pass — threw schedules so completely out of joint they were a joke. Still men used steam on rails. Ships were cheaper; but shippers used rails. The little slat-seated passenger cars, with dusty windows

and no blinds, were so cramped a tall man had to stretch his legs in the aisle or hang them over an empty seat in front. Pictures of all this can be seen in prints of the period; and they were not given as cartoons on the badness of the service, but on the excellence. Up to the late forties, the only heat was a brick bought from urchins at the station, or a little wood stove at one end of the draughty car. Vestibules, there were none. Light at night, there was none. Porters, there were none. Baggage, you slugged or lugged or fought over with saucy cabbies. Springs on coaches and padded seats had not come in except on what were regarded as " through " trains; so morals did not suffer as predicted in the Boston papers. Candles had been replaced by smoky lanterns. Bells were now in use to signal the engineer by a pull on the cord; and whistles by steam had replaced the tin horn of the early conductor and the ram's horn of the turnpike. Station eating houses where a sandwich and coffee could be snatched were now going up: they did not need to be snatched very speedily; for a local that paused to take water or wood had a way of sitting at its leisure, until scheduled watches and clocks at divisional points began in 1842 to enforce some approach to following the hour of an advertised timetable, especially on the *fast expresses of thirteen miles an hour*. As all know, these little Long Island feeders to-day work in with the Pennsylvania system; but through that system they feed into New York just the same.

Again you must look at your map, especially if you

are a little hazy as to where New Jersey lies in relation to that flag pole of New York down the Hudson, and the area of Pennsylvania south of that " through line " from Albany to Buffalo. Close to the Hudson, New York had not grasped that rails paralleling her great river could be financially profitable; so her little feeder up to the Catskills west, and to Binghampton and Elmira and Ithaca, were as yet only conceived as supply links to her Albany and Buffalo lines, or side runs down to the Hudson. They did not come into her big plans; but something else did come into her big plans, and it came as usual through her pocket nerve. As a result of a frightful fire, which swept all the business section of New York from Canal Street to the Battery, coal was coming into use in place of wood; though wood cost only a dollar fifty to two dollars a cord, while coal cost fourteen dollars a ton. In the buying power of the dollar up to 1840 that would make the price of coal to-day about forty-two dollars a ton.

The problem to prosper New York City was to get that Western market for her wares. That would fill cars going west; produce from the farms would fill cars coming east. But how about coal from Pennsylvania mines right across Pennsylvania and New Jersey to New York City — whole trains of cars? I do not want to anticipate the story or to clutter it with useless dates; but out of those plans came a reduction in the price of coal to New York from fourteen dollars a ton to five. Also out of those plans came the development of the first belt line rails across the northern half of New Jersey and the northern three-

quarters of Pennsylvania. Out of those plans came ultimately the great coal roads like the Erie, the Delaware and Lackawanna, the Lehigh, and the Reading. Any one of the thousands who yearly go up to Chautauqua Lake from New York City, no matter which line is taken, knows how they skirt across the northern angle of New Jersey to dive suddenly across a most picturesque and beautiful section of Pennsylvania. The plan is a very confused story; for part of it goes up the Delaware and part of it up the Susquehanna, and all of it involved traversing three different states with three different sets of laws, and three different sets of canals and legions of hostile canal and turnpike companies. Again anticipating the story, the completion of the magic carpet's shuttle here made Pittsburgh, which had always been the most important fort west of the mountains, the second most important freight center in the United States. If you watch a hand weaver of carpets, you will see how often a central pattern is woven in and the connection not made with the border till center and border are finished. It was so now with these coal roads. They went on at first in patches with no more idea of becoming belts in a through line than the Harlem tram line. With two of them, the Erie and the Lackawanna, the fight was going on in 1928 to become links in a great " through " system. They began in such patches of links with names changing as little links collapsed, or charters proved unworkable, or canals and turnpikes forced unprofitable terms, that to give the multitudes of names under which they were first known would confuse the

mind. For instance, in the northern belt of New Jersey alone, I count up eight lines of which we do not recognize the names to-day.

Take the Erie! Why should the Erie be built at all? From the citizens assembled in Jones' Tavern, Jamestown, New York, there came a howl in 1831 for a short cut across the northeast corner of Pennsylvania and New Jersey either to New York City or Philadelphia. From Binghampton and Elmira right to Jamestown came the demand. Some wanted a one-charter road; but who ever dreamed of a five hundred mile "through" road in those days? Others thought it a much safer policy to build in links from point to point and use the lower canals as seasons permitted. When a charter was finally given, it forbade crossing Pennsylvania or New Jersey at all. This was like the woman's permission for her daughter to go swimming, provided she didn't go near the water. The northern towns, desperate at such a charter, invoked the Federal Government to make the survey. President Jackson approved, but practical action was blocked politically by the canals, — three of them — the Mohawk, the Susquehanna, the Delaware. (These were not the names by which the canals were known at that time, but they are the river systems along which canals more or less passable let light draft sloops and tugs traverse in high open water.) The survey had to be made at private cost and it presented the staggering total of ten million dollars as the least possible outlay for such a road. Of course, such a figure was deemed beyond human effort.

And the difficulties of the Erie over finances were small compared to the ferocious rage of tavern keepers, teamsters, turnpike men between links of its progress. In 1846, in upper New York State, mobs tore up tracks connecting sections and trampled underfoot court injunctions forbidding interference with transfer of passengers. What were comfort of passengers, prompt time, continuous tracks, to these mobs of angry men seeing a hated monopoly taking the bread out of their mouths in night stops at hotels, bus fares, teaming, turnpike tolls and fees for repairing turnpikes in slack seasons? What were New York shareholders and bondholders to them? These battles at points where links connected became known as the "Isthmus Wars"; and the discomfort of transfers from line to line can best be seen in old pictures of teams wading through snow drifts belly-deep hauling coaches to an upset. Wouldn't New York get the trade, these small hamlet merchants formerly held? Those early years of all Eastern rails were symbolical of the obstructions, mob anger, legislative folly, wasteful swindles; but in the end triumph over all difficulties; and the fools and the swindlers left at the side of the flag of progress — bleaching bones that are monuments to their own folly and rascality. The names that survive among these are names with stains that can never be erased and will always be used to point a moral of ill-gotten gains cursing the getter and taking to themselves wings. They belong to the vulture era of American rails, and will be given fully in that era.

Chapter X

Old Ironsides Becomes A Winged Steed 1826–1850

PENNSYLVANIA began steam so well that it puzzles one why she lagged. That is, it puzzles until you carefully study the map.

Here was Baltimore to the south with a railroad climbing over mountains westward to the Ohio. Here was New York to the north with rails climbing over the Albany-Schenectady hump westward to Pittsburgh and the Lakes. Was it that the Quaker, with his first flush of faith in a great vision, let caution float a cloud across that vision? Or was it that in an obviously risky game, the Quaker was going to let New York and Baltimore — yes, and the canny Puritan of Boston — take all the risks till the game proved safe? Possibly all three influences tinged the general attitude; but on closer examination the real cause of slow growth in rails lay in a faulty public policy. It was a public policy based on the deepest integrity and good faith. It is another example of the best of good intentions not always paving the way to the best of destinations.

Pennsylvania had profound faith in the superiority of water over rail. This was natural. She lay on a magnificent body of water — the Delaware — and had spent lavishly on canals. Long before 1840, Pennsylvania had spent forty millions on rails and canals; not a third had gone to rails. She had done more. She had worked hand in hand with her neighbor New

Jersey to bring New Jersey's southern and western traffic down to her doors.

New Jersey, too, had been as enthusiastic over rails as the other states, and she had not been ungenerous to them; but she knew, as we know to-day, that her northern trend was to New York and her southern to Philadelphia. Perhaps she leaned a little too heavily on those neighbors to take the leadership herself. Her rail charters up to 1833 covered a capital outlay of almost ten millions; but so many of them embodied impossible features that few could be used; and those few were chiefly backed by New York and Philadelphia men. There was that foolish clause — the right to repurchase — which frightened timid subscribers. There was an act restricting fares to four cents a mile. After a ruinous panic was a bad time to restrict fares on ventures still fraught with terrible risk. There were transit taxes of ten cents for each passenger, fifteen cents for each ton of merchandise — before any one could guess the number of passengers or the quantity of freight. The Delaware Canal, of course, did not like these prospects of rails, especially as some of the short lines were beginning to lay heavy cast-iron rails instead of the thin iron strip. This looked like permanency. In return for her charters, New Jersey gave some few roads an absolute monopoly in this area and also exacted a revenue by retaining a fifteenth of the stock. Those lines were profitable from the beginning and gave the state a revenue of twelve per cent. In one — the Camden-Amboy line — the monopoly aroused the usual

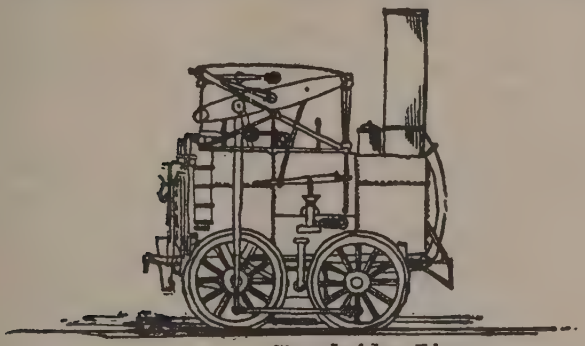
charges of rascality to the state; but an impartial investigation proved that the monopoly had paid the state ten thousand dollars more than was due, and got it back.

But southern New Jersey was geographically linked up to Pennsylvania, and Pennsylvania wobbled between pushing the coal lines and hanging to canals as the best carriers. Colonel Stevens had a charter as early as 1823 to build a rail line up the Susquehanna; but its existence was limited to ten years by law and, of course, it could not go ahead. Finally, in 1829, the state took Stevens' charter off his hands and completed a state-owned line — the first in the country — for eighty-one miles in 1834; but, like one of Canada's great transcontinentals, the first idea was for the state to own the line and rent it for use to any one who paid the charge and put on horse, mule, steam power. The state would on request supply engines. The experiment ended as it did in Canada a century later — in heavy loss to the state.

It will be recalled that a Mr. Allen had been sent to England to buy English engines in 1828. Two of these, the *America* and the *Stourbridge Lion,* were tried out in 1829, Mr. Allen running the *Lion* across a trestle to the wild acclaim of people who would not risk their necks by accompanying him. The *Lion* was too heavy and cumbersome.

The state had meanwhile double tracked part of its line up the Susquehanna. Working in a Philadelphia jewelry shop was a man then in his early forties, Matthias Baldwin. Like Fulton of steamboat fame,

he had turned his hand to engines and built *Old Ironsides* — four wheels, five tons, horizontal boiler, tender with water and fuel behind — good for twenty to thirty miles an hour. Within a few years, Baldwin had perfected an engine that could do sixty miles an



Stourbridge Lion.

A heavy and cumbersome machine, the *Stourbridge Lion* of 1829 was one of a number of unsuccessful importations from England.

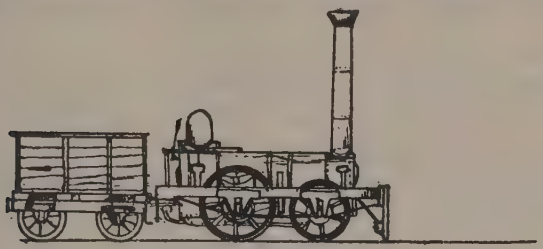
hour; but a twenty-five-ton engine was a giant in those days. Cab shelter for the engineer, springs for the axles, spark arresters, and countless technical improvements came later from Baldwin, the jeweler, whose great locomotive works are a monument for their founder to this day. One would have thought this and a state-supplied track would have spurred steam rails in Pennsylvania; but it didn't. If the state would build rails, let the state do it. Hit-and-miss service by independent carriers was too undependable. Philadelphia merchants were shipping their goods west by way of New York. The state rail lines

were finally sold to what is to-day known as the Pennsylvania Railroad.

Meanwhile little links from Philadelphia to Baltimore, from Philadelphia to Germantown, were going ahead and intermittently standing still under independent small private ventures. With the exception of the Reading, not one proved successful either in revenues or in service; and the Reading was essentially a coal line. Southern trade was going to Baltimore; Northern trade to New York.

Something was essentially wrong with the Quaker State policy. Under these auspices the Pennsylvania railroad charter was born in April, 1846. It was to put a road through from Harrisburg to Pittsburgh. Its capital was ten millions, later increased to fourteen, the state to be paid a tax for every ton of freight — not a heavy tax, about three mills per mile — and the road could be purchased by the state in twenty years, after paying investors eight per cent and deducting all profits from the principal to be repaid. As the road cost over fourteen millions, the capital and a good margin of revenues were absorbed from the first; but it was able to pay six per cent interest on subscriptions, till it began to pay real dividends in 1856. Up to 1860, only one-fifth of the money needed for extension was raised by bonds. This speaks volumes for the wise and careful management. The Pennsylvania has the longest record for continuous dividends in the United States. It goes back eighty-one years and the dividends total almost a billion dollars.

But how raise that capital in a state where rails had failed and lagged owing to a mistaken policy? Shares were peddled from house to house in Philadelphia and sold one at a time for fifty dollars, with not the slightest hope of remuneration, and sometimes only one dollar down on a subscription of five shares at a time, the rest to be sent in as money was called for needs. In that way three millions in cash



Old Ironsides.

Old Ironsides, built by the founder of the Baldwin Locomotive Works, marked the beginning of the modern American type of engine with a tender behind and a horizontal boiler but with a smoke stack still too tall to pass under overhead bridges.

was gathered up and fifteen miles put under the spade in a year.

From that date to this, the Pennsylvania has never been controlled by any clique of financiers, but owned solely by the public investors, of whom forty to fifty per cent are women. To this day half of the Pennsylvania's big family of one hundred forty thousand shareholders own less than ten shares each. This kind of rail stock can never become the sport of gamblers. It is the best example of true public ownership. The president of the Pennsylvania was paid five thousand

dollars a year to give all his time to this road — the most liberal of all rail heads' salaries at the time. The company was given permission to buy shares of other roads that would facilitate connections; and then began a policy of buttressing its strength by buying independents before they became obstructionists. In this way the road gained entrance to Cincinnati, Pittsburgh, Chicago, Columbus, and really right of way from the Ohio Valley to St. Louis. It will be noticed it was " the call of the West " that lured the steam flag ever and ever onward. What was the West at this time? It was Illinois with roughly eight hundred fifty thousand people, Indiana with almost a million, Kentucky with almost a million, Michigan with less than half a million, Ohio with nearly two millions, Wisconsin with about three hundred thousand; and that West had thirteen hundred miles of little struggling lines of which the Pennsylvania controlled not quite half. This was a tremendous market as a prize for the Atlantic cities.

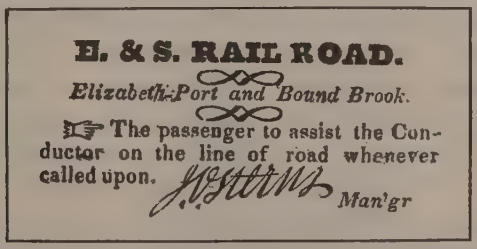
The Pennsylvania put on a uniform gauge for " through " trains. If you look up rail stocks, you will find that, in periods when other rails were gyrating in a macabre death dance, " the Pennsylvania " held steady at 93 to 88. By 1850, when New York had fourteen hundred miles of rails and Massachusetts one thousand miles, Pennsylvania had nine hundred. Only one authority puts the figures higher for Pennsylvania by three hundred miles; but when the Pennsylvania took over the state line, it took over in part a double-track system; and much of this double track

was useless. It was a gravity road. (For the benefit of readers not familiar with modern mining and lumber camps, a gravity road is simply a road of two parallel tracks going in a straight line — not curves — up a hillside, on which the loaded cars running down a cable of their own weight pull up the empties or the loaded cars on the other line.) These clumsy devices were discarded by the Pennsylvania for switchbacks, a curving ascent up easy grades, or for tunnels, of which it built one of the first.

Private ownership was doing what public ownership did not dare — what, in fact, rival states would not have sanctioned.

In the progress of steam, prejudice was now giving place to proof.

The Pennsylvania was one of the first roads to recognize that in dignity and responsibility the train conductor was the equal of the officer in a small unit of


E. & S. RAIL ROAD.

Elizabeth-Port and Bound Brook.

☞ The passenger to assist the Conductor on the line of road whenever called upon.

J. Stevens Man'gr

In the early railroad days the possession of a ticket carried with it an obligation to lend a hand in case of a crisis.

the army. The "captain of the train," or conductor, was vestured in an army costume — blue coat, brass buttons, and gold stripes for years of service. The brakemen were put into gray sack suits.

Ignoring for the time minor technical inprovements in machinery, which were now coming along so fast they can hardly be set down before being discarded for a better, let us see what was happening in the larger, deeper policies of steam on rails:

Iron rails were taking the place of wood, just as iron was to be replaced by steel.

Gravity systems were being replaced by grade ascents in switchbacks and curves and tunnels.

To a T-shaped rail was now added a deeply flanged wheel rim to hold to the T rail. This may seem unimportant, but it banished the fear of the speeding train not staying on the rail on curves.

Speed was no longer feared — even speed of sixty miles an hour.

Freight had not been considered essential in the early tryout of rails. Passengers were the all-important. Now freight, especially on the coal carriers east and the cargo carriers to the Ohio, was as great a revenue producer as the passenger.

Rebate fees paid by the rails to the canals and forced by law to be so paid were now beginning to show their sinister features. They were the seeds of a weed that was later to bloom in all its wicked features, and to multiply like the wild mustard of the prairie which in high winds blocks against barbed wire fences eight feet deep and spreads wasteful ruin on all surrounding crops. Rebates had begun to canals. With rails now permitted to carry freight, "runners" — or what we call freight agents soliciting traffic — went among shippers to get freight away

from canal lines. There was nothing in the law at the time to prevent these " runners " offering a big shipper a discount on quoted rates. Up to 1850, rebates do not seem to have passed this discount line. At the time they were no more than innocent devices to fill empties and avoid delays of filling half empties at local points; but in the next quarter century, this evil went much farther. Not only did the big shipper demand rebates as his right; he demanded paid to him — not to the rail for its service — a rebate from all shipments by his rivals; and, of course, such rebate was to be paid to him secretly. It sounds complicated, but it wasn't. This practice really came to its full bloom as a noxious, assassin thing in the bitter wars between big oils and little oils. Selling at perhaps the same price, the little independent could not understand why he was losing and skidding down to ruin, where the big fellow selling at the same price was making huge profits. It was really a cunningly concealed device to steal from another man's pocket; and it began in the early rebates paid by rails to canals, and then by rail " runners " in discounts to big shippers.

Consolidation — the linking of many little lines in one — had been forced by necessity. Innocent enough in the beginning, at a later day this was used by inside rings to double, treble, and quadruple capital, and sell the stock to the public; then when the bubble of more stock than could possibly earn dividends had burst with ruin to the investors, retirement of the rascals, who had pocketed the proceeds, to the ob-

scurity of "ill-health" or "disagreement with the directors' board." One excuse was as good as another. The public held the bag and suffered the loss.

Some sound lessons had been garnered, as well as unsound examples set up as red signals.

Profits to investors could not be ignored. Otherwise, investors would buy neither stocks nor bonds.

Rails were not a free highway. They were a common highway, open for use on payment for service. Steam had right of way on crossings, for the simple reason that the train could not get off its rails. The foot passengers and the wagons could.

Freight was beginning to be classified according to weight, quality, speed, bulk, local stops, long unbroken hauls — the beginning of the long-and-short-haul fight; but by 1850, there were exclusive coal trains. Coal, for instance, should not be mixed in one car with grain. Butter and milk took taint from pork and beef shipments. Heavy stone did not mix well as a cargo with bulky light hats, or expensive packages of silks, or sponges and drugs and explosive gunpowders and fragile furniture.

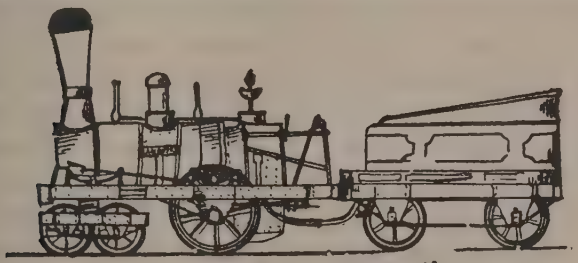
A uniform gauge of four feet eight and one-half inches was becoming universal.

Signals, couplings, head and tail lights were becoming uniform.

Rail rates made inflexible by law had failed. They had hurt shippers just as much as they had investors.

The growth of great city centers wherever rails converged "in a net" was now unmistakable. Whether this was a good or a bad thing for the race,

we do not yet know. There are possibly as many opinions as there are people; but if you look at the map from Albany to Chicago, or New York to Chicago, or Philadelphia to St. Louis, the trend is so self-evident it demands no proof. One side would perhaps point with pardonable pride to common systems of steam heating, of electric and gas lighting, of paved roads smooth as a floor, of city tramway service at five cents for twenty miles, of sanitary bathrooms, of great, cheap-merchandise department stores. The



First Rogers Locomotive.

The Rogers locomotive represents another step toward the development of the modern American type of engine.

other side would point with bitterness to what is called "the devilization of civilization" — the cave life of the great apartment house and tenement; the boxing of millions of human beings in small areas dependent on far farms for pure food; the high cost of inferior foods contaminated between field and table; the street as the poor child's playground; the passing of the old neighborly spirit in small communities; the almost universal renting of homes in big cities. Motor and electricity may yet lessen many of

these evils; but whether greater good or greater evil has resulted to the race from converging in a net vast numbers of workers, no one can deny the enormous benefit of the rail in growth of values to the farmer along its twin tracks.

Seven thousand dollars was still regarded as a very high price for a high-speed engine. Compare that to a three hundred thousand dollar locomotive to-day — not steam, but electric — and we have traveled so far in a century's garnering from the lessons of experience, that no sane mind can to-day say " Nay " to the wildest dreams of the wildest dreamer, or the farthest vision of the most inspired prophet. We may be traveling in spirals that seem to go down, but the spiral is always pointed up. We may seem to come back to where we began as the switchback up one side of a mountain and down another, or across a stream and back again, or through a tunnel of dark and confused and smoky noises back to the level where we plunged into chaos; but ever we have been traveling onward.

All these achievements of a past century sprang from a seed called " faith " worked out by nameless human tools in the hands of a divine destiny. It was a faith that refused to be daunted, refused to be stalled, refused to be discouraged, refused to be obstructed by the impossible; that tore up mountains and cast them in the midst of the sea; that walked on water and leaped torrents; that multiplied values more than the baskets of bread and fishes in ancient miracle; that traversed the waves of the sea and put

bridles in " leviathan's jaws " and rode, when it could not conquer him; that used the stars and the sea as its guides in mathematical and surveyor's charts.

With that record of a century behind, it is hard to be a pessimist for the century ahead. We need such assurance to buttress our faith; for steam on rails was about to plunge into its darkest period of a vulture era.

Chapter XI

The Twins Have Double Convulsions
1837–1839

THE panic of 1837 comes into the railroad story so often that it must be explained.

At mention of the word " panic," the average hurrying citizen throws up his hands as though to jump off a diving board and not quite sure when he went off the deep end whether he would come up. As an excuse he takes refuge in some such platitude as " no one can ever foretell "; or " things over which we have no control "; or " oh — high finance — skullduggery — manipulation." Whereas, if we hadn't learned lessons from the past, the race would still be on a level with the child mind of the Australian bushman or the African negroid. Panics are no harder to understand than are any child's " sums " in addition and subtraction.

The War of 1812 had hampered shipping from all ports — hampered it by danger of attack, by blockades, by jams of freight, by uncertainty as to prices in world markets and still greater uncertainty as to ability of European and Asiatic ports to pay Americans back in gold.

When the war was over and peace established, instead of a slump there came a wild rebound. Ports opened both in the United States and in Europe. Europe, bare of supplies as Mother Hubbard's cupboard of a bone, bought American exports hungrily, greedily, avidly — for Europe was bare as the result of the Napoleonic wars.

The reaction in America with railroads, canal boats, schooners going like shuttles to and from the West brought the most prosperous era, brief as it was sudden, the new Republic had ever known.

Farmers were prosperous from high prices and access to foreign markets. Merchants were prosperous from sales to farmers and to Europe. Transportation lines were prosperous and worked overtime. Unemployment, there was none. Plantations in the South doubled, trebled, quadrupled the acres planted to cotton. With access to the West opened by canal boat, steam on water and steam on rail, people flocked to the Middle West — the Far West of those days — to grab the rich land that did not need the rooting out of hardwood forests before a plow could turn a furrow.

I quote the general conditions from an old French analysis of the period from 1818 to 1837. An account of the times in really scientific and financial terms may be found in the famous Bullion Report of the period, when England assembled every known commercial expert to give advice on how to get her trade back on a gold basis; for trade had to rest on a gold basis. It had to use gold and gold only for international commerce, because gold was the only currency acceptable to all nations. India and China particularly — lands of silks and spices and teas — would have nothing to do with paper money. They wanted payment in gold; and there did not seem to be enough gold to cover the needs of trade. So I quote the old French report: "Wonderful prosperity; enormous

quantities of paper money issued by public and private banks to cover the needs of expanding trade . . . a rise in prices of everything from lands and houses and wages to foods and merchandise and clothing . . . wild speculation in sound and unsound ventures using chiefly paper currency, notes, bonds; aims to grow rich at once . . . craving for luxuries unknown before . . . enormous rise in loans, discounted notes [many of which were worthless with no security beneath them] . . . brokers' gambling speculations . . . too many banks with no real gold reserves in their vaults" which loaned to favored customers with "no real security for the loans . . . everybody in debt or on credit." Taxes for public improvements in roads, in rails, in canals had increased enormously.

It is nonsense to say the wise heads of that period did not foresee the danger signals. Prosperity running faster than cash profits — then the jolt down — a temporary halt — then a wild avalanche of selling good and bad in a frenzy. Wise men all over the world did foresee. Chinese and Japanese and Oriental merchants now refused to sell to Boston merchants except for payment in gold — no more furs from America in trade, no more hardware from England in trade for silks and teas and spices — gold, please, Mr. Ame-l-ican man, for us!

Wise heads in America saw what was coming, though they did not shout nor advertise it. That would have brought them down in the universal wreckage — caught like rats in the ship through

whose hull they had gnawed the holes to let in the swamping seas. I am sorry to say some of these men either lied about things or deceived themselves.

The great Biddle banking houses of Philadelphia and Baltimore paid the Southern cotton planters in banknotes, but when they resold that cotton in Europe they took mighty good care to exact payment in gold; for whatever comes — gold is gold and interchangeable at all times in all nations for what you must buy. But what would happen when all these cotton planters, all these builders in the cities, all these speculators in land, all these workmen with savings in banks — demanded gold at the banks for the paper notes swelling their pockets? On with the dance! Bankers dared not pause to ask themselves that question. They probably hoped to get enough gold piled up in their vaults before the crash came, to meet the demand when it did come; and it came so gradually that few realized, when the bolt crashed from the blue in 1837–39, what had brought it so suddenly. Why, the country was so blessedly prosperous the Federal debt had been extinguished before 1836. There was a perfect riot to help spend the surplus. As President Harrison said many years later, "God help the surplus." Every thief in the land was after it with legal plans to spend — spend — spend. Public works would give employment. People employed would have money to spend. On with the dance; on with the giddy whirl to the edge of the precipice — "eat, drink, and be merry for to-morrow we die."

And yet a schoolboy could now read the steps in this Death Dance of Folly. Biddle had accumulated a fortune of fifteen millions, equal to John Jacob Astor's or Vanderbilt's, from 1818 to 1837. He tried in vain to tie up all the banks of the South in a chain that would hold if only the weak links did not break under the strain, but the weak link in that chain showed when people presented those paper bills at the cashiers' wickets — they wanted gold, not explanations. Explanations would not pay debts. Yet the chain of rail banks in the South did hold the Southern rails up as soundly as any rails from Boston, New York, Philadelphia.

Now follow the steps of the Death Dance! They are like the whirl of a dervish till he falls senseless, and then gets up with the headache of the morning after.

When China and India — which have always hoarded silver and gold in palace chests, not banks — demanded gold and American and European traders could not deliver gold, the Orient ceased buying. You remember how that ruined John Jacob Astor's Pacific Coast fur project.

Results — American merchants could not sell to Asia.
Foreign trade slackened, dulled, stalled, stopped.
Shipping slackened, dulled, stalled, stopped.
People employed in shipping began to

find themselves out of work and couldn't buy from home merchants what they usually bought.

But there still remained the markets of Europe in need of all America had to sell; but Europe could buy only up to the limit for which she could pay; and when America began to demand payment in gold, with Europe gradually getting back to where she could supply herself or do without, Europe ceased buying so wildly.

The results — need they be given? It was the same as in the case of Asia multiplied a thousandfold in the backwash of a tidal wave. Wheat didn't fall to thirty and forty cents as it did in later panics — it fell so low it had to be fed to the pigs. Cotton didn't fall. It smashed — smashed in spots, for highest grades, from sixty to five cents. Planters, who had gone in debt to expand their cotton plantations, rushed to the banks to exchange paper money for gold to pay their debts, and couldn't get it — found there wasn't any gold; and while the paper currency was not worth twenty cents on the dollar, they were in debt at one hundred cents on the gold dollar. It was the same in every line of life where people with paper currency in their pockets and debts on their backs rushed in packs to get gold and found their paper money worth only twenty cents on the dollar while their debts pressed them at full value plus interest rates at from eight to twenty per cent.

As Solomon said — there is no new thing under the

sun! America went through the same cycle after the Great War. All that prevented the young American Republic coming to the hunger line in 1837–39, as Europe came, was the fact that America was still a land of farms, furs, mines, forests, fisheries, and though a man might not have a dime to rub against another dime for a year — he could fill his stomach with his own pork and beef and poultry and wheat; he could clothe himself in fur, coon caps, buckskin moccasins, wool woven at home, flax grown on his own land; he could keep himself warm with his own wood; he could fish; he could hunt; he could trap and keep very comfortably alive, though the windows in his cabin in the wilderness frontier might be only skin parchment and the door hinges of buckskin leather.

As for the towns, I quote again from old records: ". . . money could not be obtained on any security. Those who had gold hoarded it. Runs on banks were universal. People lacked food. Streets were deserted. Docks rotted. Theaters and concert halls were empty. Rents tumbled from $1,200 to $450. Land could not be sold at any price," farm lands least of all. People abandoned their Eastern homes plastered with debts for " the trackless forests and plains of the West." Banks were loaded with " foolish land speculations, which they could not sell." " Tax collectors refused to take payment in paper currency and demanded gold." I wish there were records of the banks that failed, or staggered to their knees, at this period; but there are none — at least, all existing records are

more or less in dispute. Federal supervision was still very loose, and the conditions were so bad, Federal supervision may have worn blinders. The whole truth might have counteracted the remedy and scared the patient to death and the doctor out of the house.

Of course, the Federal government came to the rescue and rushed an agent to London to raise gold on American public and private shares in banks, in shipping, in lands, in rails; so out of a great evil came a great good. European investors began financing the growth of America. But while this stopped the first crash like a breakwater against a tidal wave, or a lightning conductor against a bolt that sets a house on fire, on such foreign loans interest had to be paid; this brought the second jolt, in 1839, and the panics of this era became known as " twin convulsions." The signs of the second convulsion came in symptoms of which wise heads take nervous cognizance to-day — the banks of England and France raised their rates and gold began dribbling away to Europe in small obscure monthly shipments; and of course, people proved then as they do now — that was a good thing. Too much gold meant too much inflation, money too easy, speculation, rash ventures; but the wiseacres knew that underneath was the dangerous undertow that might suck to ruin. If the gold went off on a gay excursion to Europe and Asia, and the public in America suddenly in mob fury — as mobs are apt to act — wanted gold cash for paper money, what is called a panic would occur, though you might call

the panic by some more sweet-smelling name — a readjustment, a healthy reaction, a correction in a crazy market.

Fortunately the infants survived and became so sturdy and kicking in another ten years that it is a question if farmers and shippers and merchants were ever as soundly prosperous as they were up to 1873, until the great prosperity of the World War followed by the same "twin panic" as rocked us just before and a few years after the war.

It is almost sardonic to recall that a century ago every one had proved we were so prosperous as to be panic-proof and fool-proof. It is true the banks thought they had an absolutely fool-proof machine, mechanically to supply all credit needed. But behind every machine is — man; and man is not yet fool-proof.

A country can no more pull itself up by its own boot straps than a man can.

What rescued from the ruin of the twin panics of 1837 and 1839 was one of those curious parallels in a lot of simultaneous movements which makes men say "America traveled in luck"; or, a Divine Destiny foreordained by a Divine Architect; or Fate!

There has never been a panic in America from 1837 to 1921–22, which has not been helped unexpectedly by a huge crop — corn or wheat — which brought back gold from the rest of the world.

The Mexican War of 1846–48 left the United States with the new cotton territory of Texas, the mineral and wool lands of New Mexico and Arizona

and California. Why should the planter of the Southeastern States go staggering along under paper debts, which he could not pay in gold, when he could trek over the Blue Ridge or round the coast by schooner to a new cotton field where millions of acres of land were for sale at fifty cents an acre? So he pulled up his home roots and sold his slaves and trekked and laid the foundations of the very best American pioneer stock in blood and brains, in these new territories. That is why you can find in those states to-day a stock of purer American blood than is to be found in many industrial Eastern centers. You detect it in the broad Southern drawl of the long English *a's*, in the slightly slurred *r's*, in the never slurred *g's*, in the never omitted *h's* of the true Englishman as distinguished from the Cockney. You get it in the casual, almost slow, physical movements of steady nerves concealing a reticent, almost lightning-quick mind — the man who doesn't brag, but acts and lets results speak. You get it in the tall, almost raw-boned, magnificent physique.

And right in those very years gold was discovered in California. Gold, of all things on earth, which the American Treasury and the American banks needed most to get back on their feet — gold in such quantities, gold in free nuggets, placer gold — the prospect went to men's heads and drove them mad. The trek became a stampede, peopling sections that might otherwise have lain dormant for another century; and those people called for steam rails, howled for steam rails, and forced steam rails as a flag of progress from

Atlantic to Pacific. Within a few years, the Pacific Coast had three hundred thousand people from the East and Middle West, all gold-mad.

But this was not all. The Northern rails to the Alleghanies had crossed the ridge of mountains, and the great rivers west of the ridge were covered with steam river boats, flat boats, tugs, barges. Thither the people of the North Atlantic States hied them from the hard conditions hounding them in the panic of 1837–39. Why dig out tree roots and build stone walls from the rocks heaved up in New England farms by frost every spring when here, west of the mountains, were free lands or lands for sale at a dollar and a quarter an acre with access to market by rail and water? This movement, too, became a stampede that peopled the territory from Ohio to Iowa, from Michigan to Tennessee — that sent the population of these districts up to more than the whole Republic had been in 1800; and this population not only revived the languishing trade of Atlantic cities by buying from their merchants but it revived their foreign trade by shipping out farm products.

But this was not the last parallel movement so baffling to any rational explanation of human history. When the War of 1812 stopped, Astor had been driven off the Pacific Coast as a trader. If he had been defeated in the war, he could have received back by treaty all his possessions; but he was not defeated. He was jockeyed out of his possessions by his poltroon managers at Astoria, selling him out to Montreal traders; and Oregon was left in joint occupancy to be

The discovery of gold in California and the subsequent migrations westward provided not only a tremendous incentive for the development of steam rails but the means by which the young republic financed them.

settled later. In the interval, England, under the advice of a foolish, light-headed young man — Gordon of the Aberdeen family — had decided that territory was not worth the fight for it, not worth what she might have to sacrifice in trade profits with American Atlantic cities; the Hudson's Bay Company had given orders to its fur traders in Oregon to " trap it out " and move up to British Columbia. Dr. Whitman has been given credit for " saving Oregon " by his famous midwinter ride. He did; but not as a missionary. It was by rousing the East to the value of Oregon as a territory for the United States, to hold what she owned by right of discovery. As a missionary, Dr. Whitman, one of the noblest, most patriotic souls that ever lived, had failed, as had all the early missionaries to Oregon. The mission board was on the verge of closing down every mission in Oregon; but a fight will always rouse lethargic people. If you want to make a sensible dog drop a good meaty bone, show him his reflection in water. Dr. Whitman did arouse the East to the value of Oregon, and was followed back by colonists in trains of thousands, on horseback, in wagons, which now crossed the Rockies for the first time, on foot, with cattle, poultry, household possessions, which they flung to the side of the trail as useless excessive baggage — pianos, parlor organs, Chippendales, rockers, cradles, what nots. People who had pulled up stakes to trek to Ohio and Illinois and Indiana, now pulled up stakes to trek to Oregon — poor things! — for many of them left their bones to bleach on the trail where monuments mark

their courage if not their discretion. The world knows the sad tragic drop curtain of this movement — but only drop curtain to the final act of triumph. The Indian did not object to Whitman — the missionary; but he did object to Whitman — the colonizer; and the Cayuse tribe massacred him and his missionary band with a cruel ferocity never exceeded in frontier life.

Again, if you want to consecrate a flag, dye it in blood! Oregon had come in as a territory before the Mexican War. It could not be left another year to sink or swim in the backwater of diplomacy; for troops must be sent to quell those triumphant Indian tribes now elated to madness by the massacres of white missionary colonists; so again out of a great tragedy a great good emerged.

Now we go back to the story of steam's flag of progress westward. So far it had rested on the ridge of its triumph: the Great Lakes, the Alleghanies, the gaps of the Blue Ridge and the Cumberlands. We have seen how the twin panics of 1837 and 1839 kicked it over the pausing place willy-nilly. Curious, too, and utterly contradictory. Humanly speaking, one would have said those twin panics would have set rails back a quarter century, until the country got its second wind; but they didn't. They kicked steam on rails forward, just as Necessity gives us the lifting kick when we most need it; but he who — Nietzschean fashion — can call all these parallel concurrent movements westward by the word "chance," has more faith in chance than any one cares to gamble on in

private life. We may think we do it; but do we? We may say Chance — Luck — Good Dame Fortune did it; but why did all chances lead to the same grand objective — the drop curtain of triumph on the final act, the advance to the Pacific?

Chapter XII
Way Down South. 1830–1850

HOW Steam proceeded across the continent with her flag of progress to the Eldorado of hopes west and yet farther west — serene, unobstructed, sure of her course as a migrating bird over chartless seas — would be an interesting narrative. For some reason that is not the way progress proceeds. Struggle must do something for the good of the human race, or we wouldn't have to fight onward so hard in a zigzag way. Despite all triumph to rear, progress is baffled and plundered; now down in the slime of cesspool mires; now up though stained; now blocked and stripped naked by thieves and left for dead; only to rise again and again in fresh triumph; and being the story of humans, that is the record of rails.

How the South lagged on steam owing to four S's — slaves, schooners, the shortness of her swift rivers from the mountains, and swamps — has been told; but the South was equally indifferent to canals, though canals didn't freeze up in the South as they did in the North. A glance at a map of the period will show that, except for the Chesapeake region, Southern canals were almost negligible; and her rails, by 1840, ran only from North Carolina across Virginia to the Chesapeake, from Charleston across South Carolina to the mountains, and from Savannah across Georgia to the mountains. In the North, rails were becoming loops of a shuttle weaving a new pattern on the face of the earth. This is the more surprising

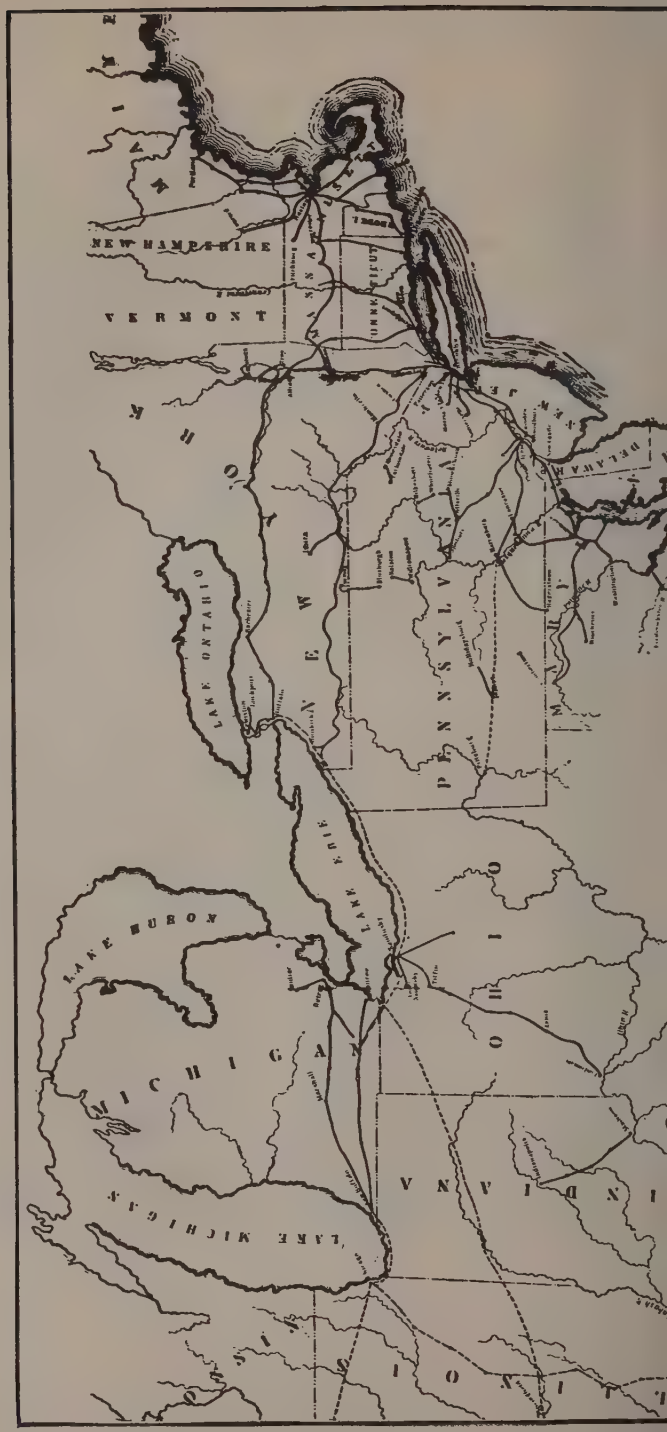
as the South had not to fight the truculent opposition besetting every mile of the way for rails in the North. She had not to fight river boat companies, for most of the planters used their own sloops or schooners. Laboring teamsters gave her no trouble except in two towns, for the laborers were black slaves owned by her planters. As for turnpikes, south of the Chesapeake there were next to none; those that did exist were notorious for their badness. A joke has come down to us — in Georgia the real first inspiration for rails as carriers is said to have resulted from the " bogging " of machinery drawn by an ox-team going in from Augusta to Athens for a cotton mill. Both the oxen and the steam boiler for the mill sank so deeply in the mud of a main highway that the owners had to wait until midsummer dried the bog before they could dig out their machinery; and the idea hit the dealers, who had lost by delay, that if steam were good for a cotton mill, why wouldn't it be better for hauling machinery in and cotton out?

The one place profiting by the South's laggard pace in rails was the little hillside frontier town, where the shallowing rivers stopped sloops and the steep grade turned common roads to Indian bridle paths where slave labor was not dependable. The slave was either afraid for his scalp from raiding Cherokees, Creeks, Chickasaws, and Choctaws along one thousand miles of the trail, or he might risk his scalp in the dive of a runaway to Indian life — of which you will find many mixed blood examples in fur trade annals. They were bad mixtures of blood,

too, and gave the fur traders some treacherous enemies who had to be bought off. Such little hillside towns sprang to life in the upland plateaus now famous for their orchards, but then equally infamous as the lawless jumping-off places into the wilderness frontier. These bartered furs from the Indians at extortionate advance prices for firearms, making every advance through the Blue Ridge and Cumberlands "a bloody ground"; and they prospered, these towns. What did they want of rails which would take their trade down to the Mississippi, or out to Charleston and Atlanta for shipment to Europe by way of Baltimore? John Jacob Astor, before coming to New York, had been a peddler of trade goods to these hillside towns for furs to be shipped out through Baltimore.

The Blue Ridge and the Cumberlands formed a mountain wall that at first frightened the South away from rails. There was but a single gap, and the Baltimore and Ohio had got across first to the great river highway of the Middle West. Besides, the South had no rich merchants and bankers, like Boston and Philadelphia and New York, to back rail projects. To get across from Charleston, South Carolina, to the Mississippi, required the permission and coöperation of four different states, and the state laws were just about as varied and inconsistent as in the North. Rails were regarded merely as links over humps of hills or between rivers — a necessary evil.

Yet the South had begun very bravely at Charleston. What wakened her up was that belt between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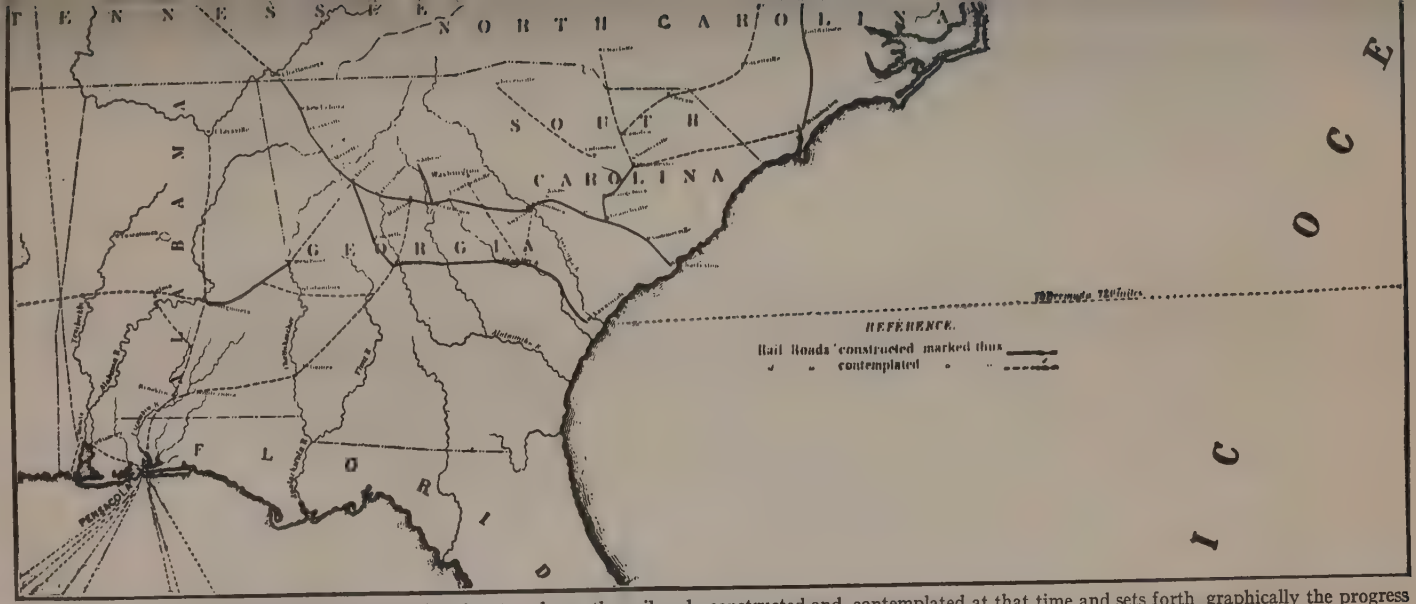


This map ordered by the House of Representatives in 1849 shows the railroads constructed and contemplated at that time and sets forth graphically the progress of two decades. At this period the South still lagged far behind the North in the development of her railroads.

the hill towns and Baltimore. Wholesale trade was Charleston's life blood, and her Western trade was ebbing away. Subscription books had been opened in 1828 to cover the costs of a survey between Charleston and Augusta. Then there were troubles laying the roadbed. Slaves were busy on the plantations and white labor from the North could not stand up to the job in heat and malaria. In summer heat, the poor whites simply scattered; in winter, they had to be regathered. In 1833, 136 miles had been completed, with Hamburg as the terminus. The engineer, Horatio Allen of Baltimore, could boast this was the longest continuous rail in the world at the time, though its seven tiny engines and forty-six cars, for both passengers and freight, were so distrusted by its backers that sails were kept on hand as a possible help on flats, gravity would work down grade, and horses kept ready for a pull up, if steam failed. The rail company was not very keen for freight up; it preferred freight downhill. A watchman and two negroes patrolled every four miles to clear the tracks of falling trees, to sweep the roadbed clean with hickory branches, and feed cordwood into the ferocious fiery maw of the new " wonder devil on wheels." The " devil," it seemed, had an awful thirst; one negro was to water it while the other fired up. Though rates were the highest anywhere in the United States at the time, they were so much cheaper than paddle boats or sloops that " a poor man could not afford to walk." Then the planters wakened to the fact they could send in slaves " by freight " cheaper by steam

rails than on water. Whether sent by freight weight, passenger express, or mile passenger rate — is not recorded. And Charleston was pleased! Receipts were fifty-eight dollars a day. By 1834, they were one thousand dollars a day, and in ten more years the Charleston road could pay ten per cent dividends.

By 1833 there were ambitious schemes to push across to Tennessee; for Georgia was now planning rails along a trail from Augusta to Tennessee, if not up through Louisville to Cincinnati. The two rails — the Charleston and the new Georgia line — were going to connect at Augusta, but Augusta forbade their laying tracks within a mile of each other. The Cumberland Gap seemed the only gate through the mountain wall to the west and north; but right in that gap converged the boundaries of three states, Virginia, Kentucky, Tennessee. The estimated costs to get through that gap up to Cincinnati were almost twelve million dollars, of which two millions were to be borrowed from England. The states generously exempted forever from taxation the stock, dividends, and property, but the lines must be subject to the laws in each state; and there came the inevitable snarl and delays. Cincinnati and Louisville were jockeying to become the northern terminus. Four millions were called for the Charleston to Cincinnati road before 1837; business men along the line of survey paid in five-dollar installments — but surveys were proving that the real cost from Charleston to Cincinnati would be nearer nineteen millions than twelve. The total was staggering. It would be in our day in a panic

year; and the first of the Twin Panics of 1837–39 was about to break.

Now recall Biddle's plan to tie up the banks in chains, each to carry other and rush to the aid of a link giving under the strain. Now there came in, innocently enough as all evils slip in, the device known as " Interlocking Directorates." Don't shy at the name! It was not the cunning device of a later day. It began almost a century ago and was simple enough. No man could foresee the future evil to spring from it. A rail bank was to be organized. The shareholders of the railroads were to buy eight millions of the bank stock at twelve-fifty a share. Such rail shareholders should be holders of the bank stock at par. In other words, they got one hundred dollars of bank stock — if the bank survived — for $12.50; but in five-dollar subscriptions, as they could raise the money, they were also paying cash for one hundred dollars of rail stock, or $112.50 for two hundred dollars of bank and rail stock — if both bank and rail survived the shock of 1837–39. Whether the $87.50 was to be regarded as " water," I am not wise enough to say. One subordinate rail taken into the new arrangement of rail and bank could pay ten per cent. Others could not and never did pay a cent of dividends, and one does not to this day. I suppose if you chanced to hold the sound ten per cent rail, you might be accused of holding $87.50 bank stock for which you had never paid; but if you chanced to hold a one hundred-dollar rail that never paid a dividend, you would not object to holding $87.50 of " watered stock " to make up that loss.

The system was ingenious to avert ruin in time of terrible strain. The bank was not to be responsible for the debts of the road, but the road was to be responsible for the debts of the bank; for the banks were to put up that extra eight millions needed. North Carolina and Tennessee came forward with charters for the banks, but again Kentucky balked. Into this new combination went many little rails whose names we may forget. They have long since been absorbed in such lines as the Southern Railroad, the Atlantic Coast Line, the Georgia lines, the Louisville-Nashville, not links in a continuous chain across the continent, but evidence again of steam versus water — steel beat water in the worst rail era ever known in the United States; steel beat water, though the planters' sloops employed slave labor.

And then cotton prices melted like a snowball in the sun. Planters rushed their idle slaves to work on the Louisville, Charleston, Cincinnati line. Subscriptions had to be called in cash — hard, cold cash; and cash could not be paid, because it didn't exist. The great crash of 1839 was upon the South in an avalanche. Desperate stockholders besought the rails to pay back the installments already subscribed. The states which had advanced small loans begged the same. Share after share not paid in full was forfeited. The public couldn't understand why a rail line with increasing traffic failed to show profits and dividends. Of course, construction in such a period had to be cheap. Poor piles in swamp areas, bridges that swayed dizzily over dizzier depths, rickety cars on a rough

roadbed, tiny engines that had to do the best they could with a light load up and a heavy load down — equipment that cost more in repairs than it had originally — all had to be replaced as they wore out. Yet at the very nadir of those woes, the forties, the South had in branches and main lines almost a quarter of all the nine thousand miles in the United States; and in another ten years, on towards the sixties, had almost twelve thousand of the total thirty thousand miles.

There is no record to show whether all the banks in the Biddle chain system survived the strain. Enough did survive " to put through " the South Atlantic rail projects, of which Georgia easily led; but a great deal of Georgia's profits went across South Carolina and built up Charleston rather than Savannah. Neither is there any record of the pay planters took for rushing slave labor to the rescue when cotton crashed — probably credit for the subscriptions they could no longer pay, or " watered stock." The Biddles and the Federal government really saved the South at this time by pledging stocks and bonds to English bankers for loans of gold. It is well to keep this in mind. It explains England's sympathy with the South in the Civil War. That may have been another " sin of the banks " — in war, but it saved the South before the Civil War from prostrating ruin. Nevertheless, chain banks, linked up to chain roads, risked terrible dangers which came knocking at the doors of Southern states. It was really the beginning of the Southern states repudiating bonds held by foreigners which those states could not pay after their defeat. And

we must not forget that in the fifties, England herself was engaged in the Crimean War. Interest in gold, she exacted from the borrowing Southern banks; but she bought cotton at forty to sixty cents and wheat at from two to three dollars from the United States — and she paid in gold.

Chapter XIII
The Surging West. 1830–1860

WITH twin panics rocking the East to its foundations in 1837 and 1839, and a stampede of people from the Middle West to Oregon, California, and the newly acquired Southwest in 1848 and 1849, were not Indiana and Wisconsin and Michigan and Ohio depopulated?

If another parallel movement had not come in, they might have been drained of people and set back twenty years. It is these parallel movements westward that give one such a curious perspective of a Destiny bigger than any one nation, or any block of states, directing the affairs of the human race in all its long treks and zigzag wanderings.

Germany and Middle Europe were convulsed by revolutionary movements. What in the world had Europe to do with the United States? Throughout Europe the sons of the revolution for freedom were in collision with the iron hand of autocracy — czardom, imperialism, or any other name given the rulership of the many by the few for the benefit of the few. For the time being, the Iron Hand triumphed. As an immediate result, the restless peoples of Europe, who had flamed up from a thousand years of crushing burdens in taxes and wars, looked longingly to that one land whose ensign had stood for freedom from its birth. France had had freedom, but she had wavered after her revolution, run into riot, and crowned her leader — emperor. England had fought for freedom from the time of her Magna

Charta; but England staggered under her twin burdens, taxes for past wars and taxes for still greater wars to come.

But beyond the seas — there surely lay a land vast enough for every man, woman, and child to have elbow room, to own body and soul, and home to be earned by sweat of brow and brawn. Conditions could not be worse in that far land than in Europe, where people were not starving metaphorically and rhetorically but literally and physically. Mud huts, wandering mobs of the unemployed, ragged children, worn women, maimed soldier folk — all the aftermath of every war — were on every side in Europe and excited little comment because they had been the aftermath of every war for a thousand years. So there came to the shores of the United States in mounting floods, year by year for a full decade, nearly a million stolid Germans solid of body, feet planted on earth, muscles hardened by centuries of toil and weeding out of weaklings, the best class of thrifty farmers the world has ever known. These did not stay in the seaport cities of the Atlantic Coast. The only ones who paused in the cities were the bank and counting house clerks. Their names to-day are to be found in half the big banking and shipping and merchant houses of the United States. With Boston and New York and Philadelphia and Baltimore rails fighting for passenger traffic to the West, the crude rail highways, bad and primitive as they were, provided easy access to the Middle West. Many of these immigrants had brought a little

money. With that, they bought $1.25 lands — the government's upset price at the period — for seventy-five cents from the rough American pioneer now stampeding for the Northwest, the Southwest, and the land of gold — California. It is actually a fact of record that at this time three hundred acres of land along the Lake Shore of Chicago were offered a newcomer tenderfoot, a greenhorn immigrant with a tiny wad of cash, for sixteen cents an acre. The immigrant looked over that land. It seemed a wind-blown sand ridge. He had had enough of that sandy soil in Germany. Perhaps he saw the waves of Lake Michigan sweep over the sand in storm. He grunted, held tight to his little wad of cash, and passed on West, while no doubt the eager seller tucked his tongue in his cheek and groomed himself for the next comer, hoping for "an easy mark." There was an expression in those days which has come down to us — "easy as taking candy from a baby." The German immigrant was not in that category. He had earned his little wad too hard. A Celtic ancestor of my own came over at that period. He had four thousand dollars. It was regarded as a colossal sum of ready money.

How those settlers succeeded is one of the most stirring stories in the lives of simply unbeatable pioneers. They couldn't afford lumber for board or log cabins. Only Michigan and Wisconsin had lumber for such houses, which explains why so many Germans surged like waves of a human sea up into those areas. The roads of Illinois, Indiana, Ohio, Iowa were such sloughs of bottomless bog, settlers couldn't haul

In the middle of the nineteenth century crude rail highways provided comparatively easy access to the Middle West. Beyond, however, in the Far West the immigrant had to travel by stage coach and covered wagon which were constantly menaced by Indian tribes.

lumber out to homesteads. Again it is a matter of record, a wagon sunk in the middle of what is now a Chicago hub, near the Sherman Hotel, had a sign stuck up as warning to other drivers — "No bottom here." I could tell the story of a dozen of these settlers, but will condense all in one synthetic picture. The small capital left from passage out seldom exceeded a few dollars. If the immigrant was short of that, he camped in shanty along the shore of waterfront towns like Cincinnati, or Cleveland, or St. Louis, or Chicago and earned enough as teamster, longshoreman, roust-about to move on. Reinforced with ready money, he now bought a team, usually of oxen — their broad hoofs would not sink in mud — sometimes a docile cow for milk; a wagon; a few bags of flour, the bags to be used as summer underwear, of which many a rude frontier joke was cracked about brands of flour stamped in hot sweaty days on the wearer. (Nor are these jokes apocryphal. I have known nuns of the frontier Northwest and Southwest who confessed smilingly to the same experience in warm weather. Their names might be Sister Theresa, Evangeline, Evalina; but stamped on their shoulders after a sweaty hot day would be some patented flour or bakeshop bread.) He also bought some oats and wheat and root seeds; not always a plow, for he could rig up a wooden one for a year's use; some pigs and chickens; an axe, a spade, a mallet, a crowbar, all the powder and ball he could afford for the old musket, a tented canvas to housé the wagon over till he could get his first house and stable up. This made up

the first equipment. The first house was of tough sod with fireplace for heat, or outside bake oven for cooking. The window holes had parchment panes. The door hinges were straps of leather. The first floor was usually hard tramped earth. A ditch outside kept this dry by drainage. But the roof! Sod on shrub branches, or such poles as the immigrant could cut from river lands. For such usage, the early rail right of way through these states had a rule that "taking wasn't stealing"—even if the cordwood piles for engine fuel showed such surprising shrinkage after a dark night that the fireman uttered words heated as his own hotbox furnace. Over these saplings was spread more sod at right angles to the first layer; and all cracks were plastered with mud. Where the sod was thin, crumbly, dry, hay was used as a pack; but this required a veritable mud pie of the sticky soil plastered two feet deep to protect from chimney sparks. Enough to say that, unless rain came in a deluge, the house was damp-proof and warm as a bear's winter cave.

Pioneer preachers in those days — to quote one record — used to say they would have "to stop stealing wood or stop preaching"; but Monday would find them down on the government land, or near the railroad wood pile "borrowing wood for the winter roof." When sloughs were impassable for oxen, men "just pulled off shoes, rolled up breeches and waded."

In such arduous homesteading, boots, socks, clothing wore to tatters. The immigrant trapped rabbits

for good leggings in cold weather and a fine stew for the cook pot, and muskrats which he could trade at the nearest post for more ammunition or at the mill for flour. In winter, he hunted. That gave more food, and buckskin for clothing. With abundant pasturage for his farm stock, with a soil easy to break, and at that time weedless, yielding a crop more or less the first year, he was in a position to erect his log cabin or plank house the next year. Planks could be hauled a long distance in winter by sleighs. And withal, keep in mind that he had lived these first years in quite as good estate as he could have in his old European home, with the advantage that he was working for himself now, not for a landlord, nor for taxes.

It was a marvelously heroic period; but it took terrible toll of human life in pioneer mothers hundreds of miles from medical aid in childbirth, and still more terrible toll of little children not born sturdy because their mothers had been overworked. If you doubt that, some day when you are motoring through the Middle West, pause and run through the little country graveyards. You will find in one family plot the first bride's age as twenty, or younger, the second wife's age twenty-two, and then possibly the third reaching full three score years and ten; for the hardships had lessened as the years went on. Infants' graves beside the first wives' graves tell the rest. Of life comforts as we know them, there were none. Sugar was maple sugar and barrel molasses from New Orleans. Tea was steeped willow leaves. Light was tallow candles. Wool and flax were woven for finer

clothing. Feather beds mountain high and billows deep were warm in winter, but a horror in the hot malarial summer.

But taxes and landlords were driving more than Germans from Europe. A succession of terrible potato famines added to Ireland's woes. Her population at this time fell almost three millions in a continuous stream of emigrants, of whom two millions came to the United States. These did not so readily drift to the homestead of the Middle West. Perhaps the years of almost slavery to soil had bred an antagonism deeper than consciousness. Where they did so drift, they conquered difficulties in leaps compared to the Germans' slow plodding; but they did drift to the new building of public highway, to artisan labor of the cities, and above all to rail construction from trackman to contractor and train hand, and later — rail superintendent and president. Recently some one went over the racial origin of some of the most highly paid rail presidents in the United States. Four out of six were descendants of these pioneers and began life as either train hands or track workers.

Thus from Europe came two of the most vital racial strains in American life — the stolid Saxon, the mercurial Celt. These took up the lands abandoned by the American pioneer trekking for the Far West and the opportunities which that restless pioneer too often failed to see lying at his own door because his eyes were dazzled and blinded by the glare and glamour of quick wealth from gold mines.

How was travel in those "good old days" before rails had reached the Middle West? How did it compare to the stagecoach and canal travel of the East? Again I could quote from many letters of the period; but I cite from only one, after steam had reached the Great Lakes and the Mississippi for water traffic. A banker from Buffalo wanted to go from Chicago to New Orleans in 1847. He gave his experiences

By covered wagon it took six months to cross from Missouri to the Pacific, a distance now crossed by rail in less than four days.

quite as a matter of course, all in the day's work, much as he wrote his bank report:

"I left Chicago on the twenty-first day of October in a stage coach for Peru, distance 100 miles. It was raining and the roads were very bad. During the afternoon the stage coach upset and we were all thrown in the water and mud. At night we stopped at a hotel, ten miles from Chicago. The next day the sun was shining, so we went on. After traveling two miles the coach upset again and rolled into the ditch. We then went on to Lockport and Joliet, 40 miles from Chicago. The stage traveled all night and when we arrived near Ottawa the coach capsized for the third time. This was at two o'clock at night. In the morning we arrived at Peru. We left Peru on Satur-

day morning for St. Louis, a distance of 300 miles, on the Steamboat *Timolien*. Everything went well that day until Sunday afternoon when the steamer struck a snag and sank in fifteen feet of water. The passengers and baggage were taken from the steamer by the Steamboat *Mall* before it sank. We sailed on calmly until Sunday night when the *Mall* struck a snag, but it did not sink. We arrived in St. Louis on Tuesday afternoon. We left St. Louis, Saturday, October thirtieth, for New Orleans on the Steamer *St. Joseph*. On Sunday morning the *St. Joseph* went on the rocks and remained there two days after which she was released and we arrived in New Orleans on November 9th."

Quite illuminating — isn't it? — and given in about as dry and unexaggerated a style as a banker could pen it.

Owing to the great fire, Chicago's evolution, between 1837 and 1839, from a village of 350 to a city of 1,470 with suburbs, is a bit difficult to set down in figures not open to dispute. At any rate, wages for rail highway workers were nineteen dollars a month, and the workers demanded eight drinks of whisky a day to keep on the grading job; and when the first locomotives came puffing over the grade, the engine had no cab, no whistle, no bell. It could just puff, like the fat lady, and keep on going. It puffed over what is now the Wabash. Before the Middle West struck her real rail pace, the Erie was using ticket punches for conductors and gongs on engines. Vanderbilt, to save time polishing brass engine rods, had ordered all locomotive bars painted black. He thought that

brass required too long " to groom the iron horse." Iron rails were replacing wood on the Erie. Those imported iron rails were costing the East two hundred eighteen dollars a ton, which explains the high cost per mile for early construction. Though iron rails bumped badly from worn ends and spread in heat and tore spikes from rotting ties, they outlasted the wooden rail, which split under the thin iron top strap. The Middle West could buy those iron straps as scrap for her first rails. " The snake-head strap " acted as it had in the East, only more so, owing to greater extremes of heat and cold. It coiled up through a coach and " bit a passenger's leg." Whether in the resulting accident or from blood poisoning, the passenger died. I do not find any record of lawsuit. The traveler was " a free pass dead head " relative of an official of the road. The Middle West could also buy cheap the light rattletrap coaches now being sold in the East as they were replaced by larger heavier coaches; but I do not find this helped very much; for one Michigan road was so poverty-stricken that all the office furniture — table, desks, chairs — had been seized and removed by a sheriff. When the annual meeting came round, president, vice-president, superintendent, and treasurer — whose duties must have been light — had either to sit on their thumbs or borrow chairs. A short while after that, the directors decided to sell the road at about half a million less than it had cost; and most of the people thought it the best bargain that could have been realized out of a very bad business. In 1847,

Illinois was glad to sell out for twenty-one thousand dollars about eighty-two miles of a railroad that had cost one million four hundred thousand dollars in ten years and had not income sufficient to pay repairs. The president of what is now the Chicago and North-Western used to sit in his office and also in the tower of his house and watch, through his marine glasses, for his trains to come smoking in over the flats. His little railroad ran only a few miles and seldom mustered more than two passengers trains and three freights a day; but it did do what few Western roads could do — it paid dividends of ten and eleven per cent; and that was a thing over which any marine telescope might swell with pride.

When an engine of twenty-five tons came with all the bloated, puffing self-importance of such achievement over iron rails to Chicago, an exuberant orator "orated" "There were giants in those days." There were; but as you look back — the human giant was a very much bigger one than the iron giant. He translated a sublime faith into a sublime reality. Is it ninety or a hundred thousand miles of rails that now radiate from Chicago? What matter? The total increases each year. Was Chicago's population three hundred fifty or fifteen hundred at the beginning of her rail era; was it thirty thousand when her first rails began to raise hopes of two hundred thousand in a half century? Again — what matter? With her suburbs, is she not to-day the third largest city in the world? What made her so? The grain of mustardseed that was faith. If you had suggested at that time that

Chicago might yet outstrip Boston, Baltimore, Philadelphia — yes, even St. Louis — people would have stared to see if you were an escaped lunatic. When Chicago enthusiasts first went to Boston and New York to try to raise capital to build railroads, they were met with the scant courtesy of " Yes, road, to begin at Chicago and end where — to jump off into nowhere "; and capital's lid was clamped down tight.

The difficulty from the beginning was that the Middle West had no reservoirs of real hard cold cash, such as New York, Boston, Philadelphia, and Baltimore supplied for the East. The epidemics to build roads had been just as mad from 1825 as in the East. Charters to build poured from state and territorial legislatures but died before they could be hatched into facts, like the eggs of poor fish strangled in a dried river bed. People ask why the Middle West plunged so crazily into state rails from 1825 to 1849. Because there was no other way to get them. Immigration was rushing in. On land two hundred miles from waterfront, it didn't pay to turn a furrow. What was grown could not be sent to market. Such areas were termed " refuse lands " — worthless, whether the newcomer had paid a dollar and a quarter as he did to the government, or seventy-five cents as he did to people moving away to California and Oregon, or sixteen cents as asked for that three hundred acres in Chicago. Acts were piled on acts, laws on laws, to encourage building — exemption from taxation forever, free right of way, state aid — still no rails went ahead across " the refuse lands." Land

grants had been made from 1803 for ferries, for bridges, for turnpikes in the East; but of what use were land grants in the Middle West, where nobody would buy them but poor German immigrants, and they promptly threw them up and went into Wisconsin and Michigan, where lake vessels gave open highway to Eastern markets? Horse roads in Indiana were girth deep mud holes in spring and fall. By the time summer or winter had improved the road, the farmer was busy on his summer work, or the Eastern market was already glutted, or the lake route had frozen up. Illinois roads were a crisscross of Indian trails usable only for canoes from head stream to head stream.

One could pick at random any one of the great belt lines radiating from Chicago — the Chicago and Alton, Chicago, Burlington and Quincy, Chicago, Minneapolis and St. Paul, the Chicago and North-Western, Chicago and Rock Island, Illinois Central; and by following its story link by link get the romance of a forward march over difficulties that would be typical of all. Let us take one or two, like the Illinois Central, round whose story begins the most hotly disputed of all fights over Western roads — Land Grants.

PART IV

The Land Grant Era

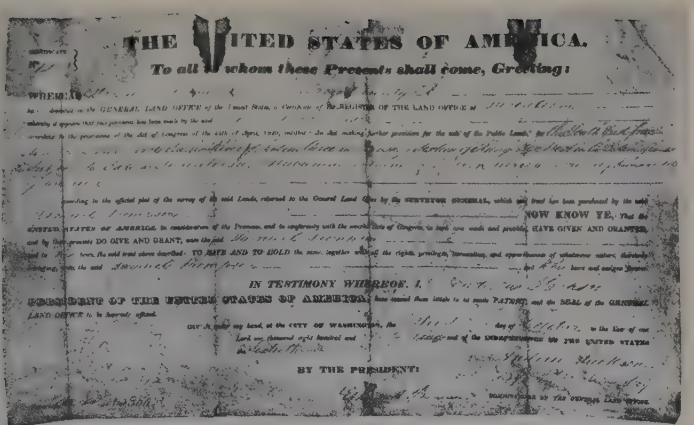
Chapter XIV
The Land Grant. 1830–1860

THE Middle Western states had been implored to build roads — get any kind of rails down at any cost from 1830 to 1856. They did; and the cost came so high it almost bankrupted half a dozen new states and territories. Then came the aid of the Federal government assigning land grants to private companies which would go ahead; and prices for farm output soared because grain could reach Europe, when Europe could and would pay any price for grain. More than four hundred rail charters were issued for lines in the Middle West at this period. When prices fell, there was, of course, another and sadder story. In prosperous times, the rails had been hounded for lower rates because they were prosperous. When times became appallingly bad, the rails were again hounded for lower rates because the shippers needed lower rates. Perhaps we should not blame either side in this eternal seesaw. When the spurs of Necessity dig deep in the flanks of a broncho, he is apt to buck pretty violently.

Little more than one hundred miles of rails were in running order south, west, or north of Chicago by the beginning of 1851; and these were what are now known as the Chicago and North-Western forty-two miles, the Wabash forty-five miles, and the Burlington eleven miles. What was later called the Illinois Central had eight miles of grading embankment by 1840. Not a rail had been completed through Illinois

from the east. There were branch lines in Michigan, of which one paid, one didn't, another was in the hands of the sheriff. Indiana, Michigan, Illinois had all tried out state construction of rails as common highway. Results: Indiana had a state debt of fifteen millions selling at twenty cents on the dollar; Illinois, a state debt of over seventeen millions selling at eighteen cents on the dollar; Michigan, a state debt of more than five millions selling at twenty cents on the dollar. That Middle West had had enough of national rails for some time. The waves of immigration had now dumped three million people into these states and territories. What good were New York's Buffalo lines or Baltimore's Cumberland Gap lines to this area? They increased their desperation by dumping West more and more people who couldn't reach the Eastern market. Both Lincoln and Douglas realized the Middle West must have rails at any cost. One hundred miles south of Chicago off any river way, was unbroken wilderness. Said Stephen Douglas in the Senate: "These lands have been on the market for twenty-three years but will not sell because they are distant from any stream." Henry Clay said: "This land is, I believe, about three hundred miles in length and but one hundred in breadth. It is utterly worthless just now . . . nobody will go there and settle." Benton stated: "These lands are classed as refuse . . . the young states are made desolate by lands in their midst that pay no taxes held at a price no body will pay. They are jungles."

In 1837 — the worst year possible — the State of



THE UNITED STATES OF AMERICA.

To all to whom these Presents shall come, Greeting:

NOW KNOW YE, That the

IN TESTIMONY WHEREOF, I,

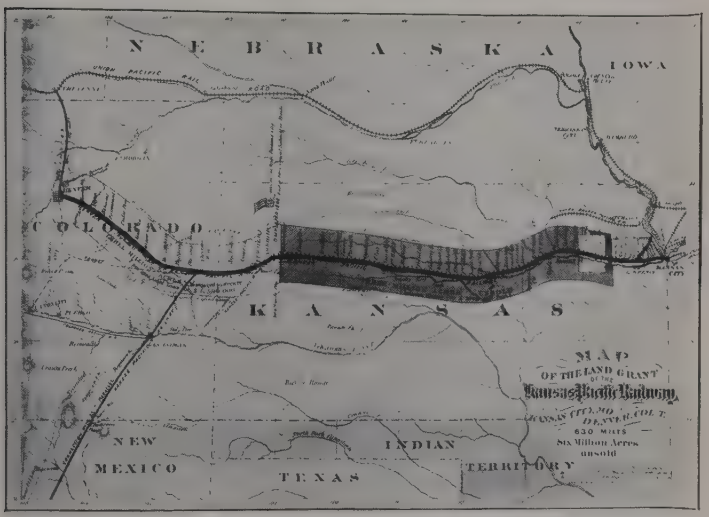
PRESIDENT OF THE UNITED STATES OF AMERICA, have caused these letters to be made PATENT, and the SEAL of the GENERAL

GIVEN under my hand, at the CITY OF WASHINGTON, the

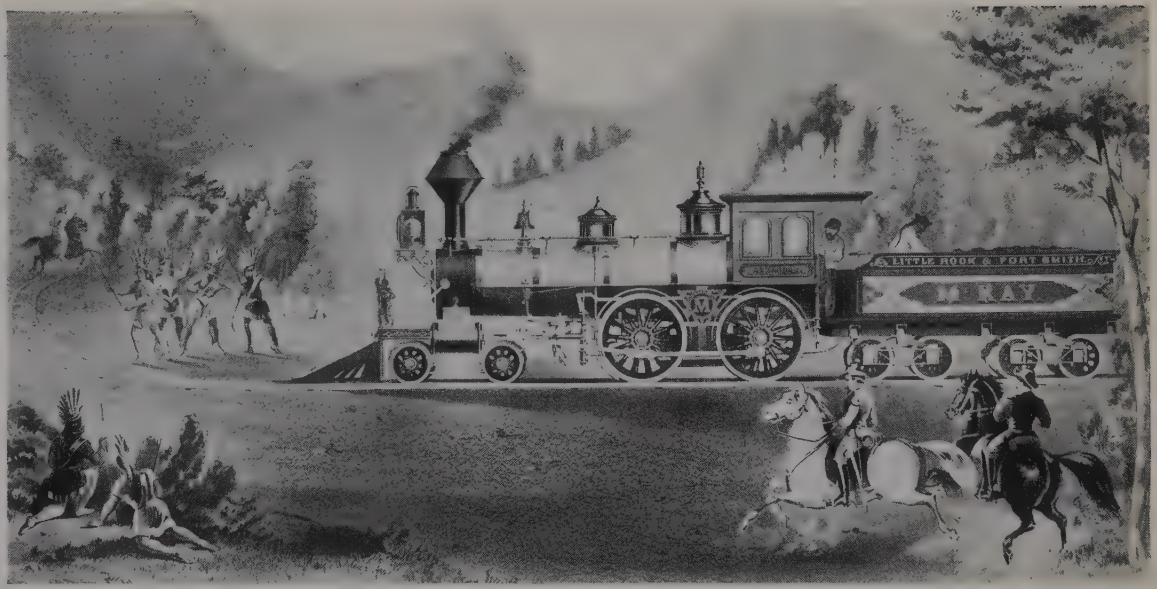
BY THE PRESIDENT:

Here is an original land grant which bears the signature of Andrew Jackson, signed by his secretary, dated October 1, 1835, conveying to Samuel Thompson of Tuscaloosa, Ala., a tract of fifteen and ninety-hundredths acres. C. H. Tuggle, father of J. O. Tuggle, clerk for this railroad at Jackson, Tenn., owns the land described in this document.

Land grants played an important part in the development of America and in the construction of our early highways and railroads. This document signed by Andrew Jackson was issued in 1835.



According to the General Land Office, land grants to aid in railroad construction amounted to over one hundred million acres. This map shows a large land grant between Kansas City and Denver.



For many years after the introduction of railways in the West the steam engine was a source of amazement to the Indian. This old print represents one of the finest products of the McKay Iron and Locomotive Works.

Illinois had set aside eleven million dollars for some sort of Central Illinois Railroads to go through Illinois down to the Ohio and west to the Mississippi. Of this three and one-half millions were to go to the Central Illinois; but after spending a half million on surveys, the project came to a dead stop. No more money from the state or from any other source. In 1851 — after fourteen of the most desperate years Illinois ever knew — a charter was granted to a new company to go ahead with a grant of public land, now assigned from the Federal government to help railroad construction. The railroad was to be completed from Chicago to Cairo and to a point on the Mississippi by 1856 in order to get its land patents in full. This would link up both the Ohio and the Mississippi to the Great Lakes. It was completed on time — seven hundred and five miles of rail, the longest railroad, as orators proudly boasted, in the United States at the time; but how dull such a fact reads compared to the real work done by men on the job.

Cholera and malaria were epidemic all through 1853. I quote from the first survey engineer's report:

" We traveled over unbroken prairies. . . . On the 21st of May, 1852, the first passenger train from Detroit entered Chicago, using the Illinois Central track by a temporary track over the prairie to the East of Michigan Avenue. Going South, we traveled 40 miles without seeing a house of any kind. There were no settlers within 20 miles of Chicago. The road was

completed in two sections to Bloomington in 1853. Our laborers numbered from 5,000 to 8,000 men. We had to recruit in New York and New Orleans paying transportation to Illinois . . . but the men would desert when the cholera epidemics broke out and scattered like frightened sheep. Men at work one day, were in their graves the next. In Peru, 130 died in two days. It was dangerous during the summer months to eat beef, butter, or drink milk. Our difficulties were increased by the groggeries and whisky that got in our camps. Drunken frolics ended in riots, when a contractor was murdered and state troops called out. One hundred and fifty laborers left in a body after the riot. Notwithstanding every effort to drive out purveyors of whisky, they menaced our work and followed every camp.

" Iron rails were brought from England by New York, the Hudson, Erie Canal and the Lakes . . . and by New Orleans. Locomotives were sent from the East but the most of the cars were build in Illinois. . . . On the 28th of December, 1855, a telegram was sent to New York announcing the completion of the main line."

The Illinois Central had beaten the time requirements to get its land grant patents by just three days. This is the kind of work of which the public hears nothing, but it grows gray hairs on young heads.

Wages ran from two hundred dollars a month for the construction engineers to sixty-five for the locomotive engineers, fifty for the conductors, thirty for the brakemen, and from one dollar and a half to two dollars and a half a day for unskilled labor, which in buying power of the dollar was not different from to-day.

So much for the construction engineer's story.

Now read from the conductors of the various links as they poked their trains westward across the prairies:

"Two engines delayed 24 hours, while engineers and firemen went off on a drunken spree. . . . North bound freight ran into a drove of cattle, went down an embankment . . . nine cars with it. . . . Engine 72 went off trestle and sank in Lake, where it lies stranded with waves breaking over it. . . . Work at a standstill for 10 days, December, on account of snow and ice . . . 12 snow plows useless . . . engine off track. . . . Two of our Irish workmen shot by groggery gang. . . . Cholera has broken out again."

Had these men been fighting a battle against the elements, the whisky gangs, and disease for some vain king to add a few miles to his domain, they would have been given estates, titles, and crosses of honor. They weren't. They were just on the day's job, fighting a battle to save three million people from ruin owing to lack of markets. It makes a great deal of difference whether the band plays — doesn't it?

Simply acquiring a land grant did not iron out all troubles for the Illinois Central. It took Douglas well on to four years to get that land grant through Congress; and the land grant did bring support from such New York financiers as Robert Schuyler, Gouverneur Morris, Jonathan Sturgis, Robert Rantoul, who could market bonds both in the United States and in England. Stock books called for a million cash and yet another million. There had to be two hundred thou-

sand dollars cash in the treasury before charter could be obtained. Surveys and grading began at both ends, Chicago and Cairo, on December 23, 1851, with the usual ringing of bells; but much more to the point was the fact that the actual cost was ten millions more than estimates of $16,537,212. Contractors took payment half cash, half bonds, and assessments were levied on stock. One would think, with all Illinois mad for a railroad, there would be little trouble about right of way through towns. On the contrary, more than one city council had to be conciliated; and it was fortunate the head engineer was left an utterly free hand to lay the line as it would command traffic and not be pulled hither and yon by claims of little towns to become cities. Chicago gave right of way of two hundred feet along the lake front, but in return the railroad had to protect the city from encroachments by the lake. The company wisely acquired, at a cost of a quarter million for purchase and a half million more for lake protection, still more waterfront. This foresight of an unwavering faith gave it a tremendous advantage in Chicago as the city grew.

Now jump forward three-quarters of a century. The line which they built became a parent stem to New Orleans south and Birmingham south. It covers fourteen different states. It includes one hundred thirty different rail links. It employs as the seasons fluctuate from sixty to sixty-five thousand people. It numbers from sixteen to twenty-two thousand stockholders whose average holdings are seventy shares.

It has paid continuous dividends of from four to ten per cent since 1860. Of the markets to which it gives access, Chicago has grown to over three million, St. Louis to more than eight hundred thousand, Philadelphia to two million, Detroit to a million and a quarter.

Cobden, the great English free trader, was one of the English financiers whose backing helped to build it. Lincoln was one of its attorneys, as he was for several of the Chicago roads at this period; and many a racy story is now coming to light of his experiences with the roads. Mr. Starr relates how when Lincoln had once charged a fee of two thousand dollars, a fussy official answered, " Why, sir, this is as much as Daniel Webster, himself, would have charged. We cannot allow such a claim." Why shouldn't a frontier attorney charge as much to win a case as a more famous pleader? Lincoln took back his bill, raised it to five thousand dollars — and got it. He had to sue to get it. When he stood up to speak before the judge, a button holding his trouser braces gave way. " Wait a minute," he requested. He took a knife, whittled a stick, anchored the button, spoke, and won his fee. It was Lincoln who fought one of the first cases of the Chicago and Rock Island to get a bridge across the Mississippi, which three Supreme Court judges had pronounced immoral and indefensible. It was so to the river steamers, who didn't want their traffic transferred to rails; but that old decision, like many others, had to go down before progress.

Other names famous in national history emerge from the medley of Chicago rails in this period. Stand-

ing in the Central Illinois station, looking to the rear, you will see what was once a freight office. In this freight office worked a boy of German descent. He was short of legs, round of body, but very merry of eye. He could never resist a practical joke. His job for the time being was with the new and wonderful toy known as the telegraph. He had discovered that a slender wire would divert the current; and to the slender wire he had attached a little flap of tin to give other boys of his age a surprise as they lounged up and down the plank platform. Up and down would jump that bit of tin. Stoop and touch it — Shock! It was great fun to the boy; but woe was that day! Along came one of his " bosses." Flop went the tin. The next scene — fat boy racing fast as his short legs could carry him with the boss in hot pursuit. Exit fat boy as employee of Illinois Central. The boy's name was William Van Horn. He next emerges in the rail world up in Wisconsin helping Carl Schurz transport troops in the Civil War. Of another type was a youth named Shaughnessy, also on his first rail job up in Wisconsin. It is hardly necessary to add that both Van Horn and Shaughnessy became master minds in directing the Canadian Pacific to its amazing prosperity in an era of terrible wreckage among other railroads.

Of the six or seven Chicago railroads which participated in land grants at this early period, it is significant that in three the directors were so uncertain of their ability to go ahead even with the aid of Federal land grants, that not a director could be induced

to buy one acre along his own rail. I don't know that we should scorn their timidity. We were not much bolder in our own generation. After the Canadian Pacific had driven its last spike connecting Atlantic and Pacific and great cities had sprung up by magic, I drove through one of those cities with an old friend whose birth dated back to this era. The city was modern Calgary. He was pointing out buildings that had gone up at a cost of from three hundred thousand dollars to a million. " Why, I remember," he said, " when the site of the whole city was swapped for a bag of missionary flour." " Why in the world hadn't we the sense," I asked him, " to go out and buy half the town for five cents? " " Because," returned my sententious friend, " we none of us happened to have the five cents." It was much the same in Chicago in the fifties.

The land grant coming to the Illinois Central was some 2,595,000 acres along the right of way. Though the state had failed to build during fourteen years, the road had to be built within six years. The lands were to be exempt from taxation. The right of way covered one hundred feet on each side of the tracks and the road was to get the alternate even numbered sections of unpreëmpted land within six miles of the steel rails; but if you think all this was given without due returns back to state and Federal governments, you mistake the astute minds of a Lincoln and a Douglas fathering the scheme for the benefit of the public. In place of land taxes, the road was to pay for all time to the State of Illinois seven per cent of its

gross income. No room for skullduggery of padded accounts and concealed assets and extra expenditures on expansion or purchases of other bankrupt roads with profits on the bargain. On every dollar of traffic or other receipts, seven per cent had to go to the state. It was to remain a public highway for the use of the government mails, troops, and what not at such prices as Congress might direct, and in 1876 Congress finally settled that price at fifty per cent of other traffic rates for passenger and freight, and eighty per cent of regular rates for mails.

It proved the best bargain ever made by the state or Federal government with any railroad.

The lands between the grants, which had been classed as " refuse waste wilderness," rose in a year to two dollars and a half an acre, within five years to ten dollars an acre, within ten years to thirty and fifty. The Illinois Central could have bought every acre of that land at a dollar and a quarter to two and a half an acre; but, like my friend in Calgary, it didn't happen to have the money. By 1925, the Federal government had saved by this bargain almost $8,705,743, which it otherwise would have had to pay. This is more than twice the highest upset price at which the Illinois Central could have bought the land.

How did the State of Illinois fare? Up to 1925, on seven per cent of gross receipts, it has received $64,402,422 in taxes. Had the road paid the ordinary taxes independent of the land grant, they would have totaled $34,400,000. The state benefited by thirty millions excess taxes. In other words, up to 1926,

the state got back almost twenty-five dollars an acre in taxes on land which it had been unable to sell. Yet more. When the land was all sold — and little of it was sold by the railroad above ten dollars an acre — and passed into private hands, that same land again yielded to state and county the uniform public tax. Here we are in a realm where figures swim in a haze; and I do not suppose they can ever be pulled out of the haze to show the entire gain to Illinois.

Of the unsold portion of the land grant, the Illinois Central, in 1915, owned 9,774 acres — practically station and freight shed areas; and, of course, the most valuable of this was three hundred and twenty acres in the city limits of Chicago; but recall that that land could not be sold at sixteen cents an acre before rails came, could not be traded for a turkey or a horse.

Of course, as the Illinois Central pressed forward its links to New Orleans and the Mississippi by buying or taking over crippled lines, it fell heir to other less valuable grants with less valuable bargains to the states involved; but that was not the fault of the Illinois Central, nor of the far-visioned men who proposed that land grants should be made to aid rails. If all bargains had been as carefully made as the one with the Illinois Central, few of the bitter words bandied in the great Granger agitation of the seventies would ever have passed from lip to lip, or from vitriolic pen to print.

In the land grant era, from 1856 to 1873, there passed from the Federal government 158,293,377 acres, of which roughly a fourth were unpatented or

not even earned by the collapse of the rails. To this must be added such individual state grants as Texas, swelling the total grants to 167,832,492 acres or 262,000 square miles, or the area of all Texas, or less than all California and Nevada. Twenty-seven rails earned their grants. Some of their stories will presently be told; and they are not the clean record of the Illinois Central. Some were failures foredoomed by poor areas and worse management. Some were examples of unscrupulous rascality, when rotting ties were laid in quaky bogs, or across sheer desert to sell still more rotten bonds, or more profitless stocks to gullible investors, but even here, Fate, Destiny, or Dame Fortune dealt one of her unexpected spanks. The story is so ridiculous it surely may be told. It is so ironical it discounts bitterness and confounds friends and foes alike.

As the various rails obtaining land grants pressed on to claim their patents, it became apparent much of the vaunted land was worthless and could not be sold at fifty cents an acre, no, nor rented at five cents for spring pasture. It was desert, sand, lava scoria brittle as glass and black as ink. The rails which really had tried to link up arable areas on different sides of these lands, worthless for traffic and worthless for sales, besought the Federal government to exchange the worthless grants for at least forested sections from which lumber traffic might be derived. As the timber was without value without rails, the government prepared to accede to such requests and arrange exchanges; but alas and alas! Some scamp with more

cunning than brains, more care for a bribe than an honest bargain — whether in the service of the Federal bureaus or of the rails is not known — took care to destroy records of some such transfers, allotments, earned and unearned lands. The rails wanted good lands. Why not let them have such, no matter what allotments had been patented? And then Dame Fortune played one of her tricks. No wonder she is always portrayed with a cynical smile at all human endeavor. Up from those desolate waste sand lands, up from those thin pasture areas, with rails rusting for need of traffic, " iron tonic for the cows," up from that black lava scoria, burst floods of gold in oil — oil in wealth of which one thousand acres sometimes exceeded the entire stock and bonds of a railroad! Was there a scampering to prove those worthless lands had been alloted and patented and couldn't be reserved by the government? There was, though but a few years previously both Federal government and rails had been trying to prove the very opposite — the government to save the forested lands now more valuable than in the sixties and seventies, the rails to get lumber lands for sales and traffic. It is one of the most ridiculous somersaults in all rail history; and I venture to say, if the dishonest scamp who caused the disappearance of the records could come back to earth to-day, the rails would scalp him and the government agents give him his weight in gold. Write and ask some of the rails what they would pay to-day for " the lost " records. You will find it runs higher than the highest paid writer's dollar a word. They

would pay about twenty-five hundred for three pages of little figures and cryptic words; and I think the government would outbid whatever offer they might make.

And Dame Fortune smiles; and no one can say "the oils are another stench to heaven in corruption"; for no one knows *where* is *what*, or what it is worth. Some day when the leather-lunged shouters are short of a sensation, someone may spring it. Can't you see what a lovely digging up of corpses back to the seventies and early nineties might come out of a morgue with grinning skeletons as the first findings?

Without land grants in the fifties and sixties, would rails have gone ahead? I am not wise enough to say. Up in Canada some twenty-five years ago, when land grants were forever abolished and state aid substituted in guaranteed provincial and federal loans and bonds, all hats were tossed in air with jubilation over an evil system — all hats but one, the hat on a little old gray curly head from the Lower Provinces, who resigned his position from the Dominion cabinet in silent protest. Was he right? I am not wise enough to say. Would the rails so bonded and guaranteed have gone ahead without aid — land or bonds guaranteed? They would not; or they would long since have been built. The Canadian Pacific, one of the most prosperous and solid lines in the world, could not go ahead without aid of both cash and lands.

But to go back to the Illinois Central. Again, luck favored the dauntless. Who could foresee or guess the enormous unexpected traffic from coal in the Middle West, from lumber in the South, and cotton in Texas,

from added areas to tobacco, from rice and tropical and semitropical fruits, from flour mills and packer's plants dotting from Chicago to the Gulf, from manufacturing plants that grew fast as the population grew, from petroleum in floods? The Illinois Central was built first and foremost as a farmer's road. It became a nation's conduit.

Did New Orleans and St. Louis suffer as a result? Their populations to-day are chasing a phantom million.

"According to your faith be it unto you."

AUTHOR'S NOTE

So many different figures and estimates have been given on land grants that I think it wise to set down a very carefully compiled record made by the staff of the Illinois Central in 1926. I do not suppose any record can be set down as absolutely correct; but here is the most nearly correct one yet issued. As the land grants to all Western rails are a point of such vitriolic dispute, I shall not again quote the totals except in two or three cases.

The original Federal grant of land to aid in highway construction was made to the State of Ohio in 1823. In all, 3,239,168 acres of public lands were granted by the United States government to various states for highway construction.

The original land grant to aid in canal construction was made to the State of Indiana in 1827. A total of 4,597,668 acres was granted by the government to aid in canal construction in various parts of the country.

The first Federal land grant to aid in railway construction was made to the State of Illinois in 1850 to aid in the construction of the Illinois Central Railroad. The last Federal land grant of this kind was made in 1871. In all, sixty-four Federal grants were made for railway construction.

An examination of data on Federal land grants reveals a number of important discrepancies between the figures of the General Land Office, Department of the Interior, of lands certified or patented to the railroads and the claims of several railway companies as to lands received and sold.

According to the General Land Office, the total Federal land grants to aid in railway construction amounted to 158,293,377 acres, of which 41,780,000 acres were forfeited or otherwise unpatented and 680,885

were canceled by court decisions. The total Federal land grants, therefore, which were certified or patented to the railroads, as of June 30, 1914, amounted to 115,832,492 acres (180,988 square miles).

In addition to Federal grants, Mr. W. W. Baldwin of the Chicago, Burlington & Quincy Railroad, in a statement printed in the Congressional Record in January, 1920, roughly but liberally estimated the state land grants to aid in railway construction as follows:

Texas	32,000,000	acres
Other states	20,000,000	"
	52,000,000	"

This brings the total Federal and estimated state grants to railroads up to 167,832,492 acres (262,238 square miles).

The land grants certified or patented to states were as follows:

Alabama	2,746,400	acres
Arkansas	2,562,095	"
Florida	2,207,023	"
Illinois	2,595,133	"
Iowa	3,866,701	"
Kansas	4,175,854	"
Louisiana	371,769	"
Michigan	3,133,176	"
Minnesota	8,029,260	"
Mississippi	1,075,345	"
Missouri	1,837,728	"
Wisconsin	3,650,866	"
Total	36,251,350	"

The land grants certified or patented to corporations were as follows:

Union Pacific Railroad Company	11,976,367	acres
Central Pacific Railroad Company	6,300,866	"
Northern Pacific Railroad Company	35,176,619	"
California & Oregon Railroad Company	3,154,994	"
Atlantic & Pacific Railroad Company	4,365,970	"
Oregon Central Railroad Company	2,894,295	"
Southern Pacific Railroad Company	5,129,831	"
Leavenworth, Pawnee & Western Railroad Company	6,883,225	"
Burlington & Missouri Railroad Company	2,374,091	"
Hannibal & St. Joseph Railroad Company	223,081	"
New Orleans, Baton Rouge & Vicksburg Railroad	1,001,783	"
Total	79,581,142	"
Grand Total	115,832,492	"

Chapter XV
Inventions And Devices In Progress 1828–1860

ANOTHER point must be kept in mind to appreciate what this steam flag of progress westward was developing in the subtle relations of Labor and Capital. We have a foolish way of speaking as though bellicose Labor in one camp and cunning Brains in the other camp — in other words, Labor and Finance — had achieved steam's triumph; as though these two camps had been in constant antagonism. Nothing could be farther from the truth. It was the teamwork of Labor and Finance that put steam on the map. We have glanced forward from Stephenson's humble *Rocket* and Cooper's *Tom Thumb* engines, resembling a child's toy, to modern locomotives hauling one hundred and fifty cars. Let us glance back now from 1860 to 1830, when steam really got under way in America.

Steam had begun with a few thousand dollars' outlay regarded as colossal capital. By 1860, surveys had been made to the Pacific Coast which contemplated capital outlay of from sixty million to one hundred and fifty million dollars for each line.

Telegraph had taken the place of the first rough and tumble fights between train crews, when trains met for right of way, to decide which train must back up to the nearest station.

Before the use of telegraphs, poles of cedar with cleats formed a sort of rough ladder for semaphoring. The operator would run to the pole, climb it, with spy

glasses scan the rails, then flag "go ahead" or "stop." A ball with a light was waved at night. Telegraph, too, had to fight for progress. The Erie had established the rule that trains going west should run to the regular stopping place and switch till the trains going east should pass. The train on the switch must not leave till the other train passed. Sometimes, a breakdown halfway caused endless delays. Where was the lost train? One day about 1851 a passenger train from New York was waiting for the delayed eastbound. The superintendent happened to be a passenger. He got out and learned by telegraph that the eastbound had not yet reached Port Jervis. When the receiving operator got the answer back it struck him as such a colossal proof of madness that any superintendent or engineer could think of running trains by orders over a wire, he sent back a quick message — "What blank fool sent this in?" The superintendent telegraphed the agent at Port Jervis to hold the eastbound there and told the engineer on the westbound to go ahead. The engineer refused flatly to take such awful risk. "Do you take me for a blank fool? I won't run by that thing," he stormed, tossing the telegram back to the messenger from the superintendent. He could not believe such messages had gone over the wires. The superintendent sprang on the engine, ordered the engineer off, grasped the lever and piloted the train himself, telegraphing orders at each station where to hold the eastbound. The astonished engineer hied himself hurriedly to the rear seat of the last coach, ready to jump from impending death.

He was so utterly staggered he could not speak and it is to the credit of the superintendent he was not fired on the spot. This was the end of switch delays, of towers for signals, of going it blind, of having negro watchmen — as in the South — act as flagmen and patrols to signal a clear track ahead. It was the beginning of the constant use of telegraph for train dispatching. Telegraph operators were henceforth installed in every station under rules practically continuous to this day. The dispatcher for the division sent orders for every train, which the station operator took down in duplicate. One copy was handed to the conductor with the question " How do you read my message? " The conductor would wire back. If correctly received, the dispatcher would wire — " All right! Go ahead."

Early in the twenties and thirties men had refused to believe cars could stick to rails on a curve. Little wheels behind what we call the cowcatcher had proved they could. A flange on the wheel and a T-rail helped; but even then, the engine builder, the famous Mr. Baldwin, had to construct a toy train with cars and send it whirling on a miniature track in a window to convince the public. When engines increased from seven and eleven to thirty, forty, and sixty tons, not only were they put on circular rails to turn in " the round house " but they were put on turn tables and whirled round to reverse direction. Costs of engines had gone up from two and three thousand dollars to twenty and thirty thousand. Wheels were no longer iron-rimmed with groaning wooden spokes, but en-

tirely of iron; rails, no longer wood with iron straps, but iron. It took some terrible accidents to abolish spokes for solid wheels. In brief, the iron rim of one cracked. Part of it flew off. The car did not immediately collapse. It ran on its other wheels, but the cracked rim tore up the rail. The car toppled over the steep embankment taking all the rear coaches with it. Fortunately, the coupling broke and the forward coaches and engine escaped; but when at night your sleep is broken by the rap-tap-tap of a hammer on the wheels below your berth, know that such testing of every wheel for a crack began the day of that accident. Know more — the humble chap in blue jeans stained with oils, who does that tapping at every divisional point, is as essential to your safety as the clearest head in the president's office. Rails are not a one-big-man job. They are in the United States almost a two-million-man job. If there is gangrene in your little finger or big toe, it may cost your life by blood poisoning. If there is gangrene of hate, resentment, treachery in the heart of a single rail worker, it may cost a hundred lives.

There is a very vital point here in rails, so vital that I deem it one of the silent revolutionary factors that may react through all the labor world. When the Great War threw rails under government control and then back into private control, there were something like two million union workers on rails. There are now 1,626,414. What caused such a shrinkage in the number of workers? Not the shift from government to private control. A deeper factor was silently operat-

ing. Machinery was more and more doing the drudgery work of the man. Gasoline speeders were replacing the old hand-pump car for track workers. Machine weeders were doing the work of men with the hoe. Derricks and giant shovels were hoisting, in one great grip, gravel and mud from embankments that formerly required an army of bending backs. At the same time, all wages for all rail workers increased from something over seven hundred a year to an average of sixteen hundred dollars a year for a shorter day's work. In other words, skilled labor with brains to operate machines had taken the place of unskilled, ignorant, mob labor; and the improvement in service can only be likened to the difference between an old lumber wagon and a silent, well-oiled, swift motor car. Instead of the discard labor being tossed on the human dump heap, the surplus was at once absorbed in other vocations without a jolt in the labor world.

To revert to the devices that came in rails during the first thirty years of their history, springs had come in universal use to avert that "concussion of the brain," which was going to drive all passengers to asylums. An engine to-day has four to five thousand parts, a passenger car over two thousand parts, a box car over five hundred. Who contributed all these inventions? It would require a book to tell; but each invention was the result of the team work — labor and brains.

Instead of little coaches like cabins on wheels, by 1860 passenger cars could seat — not seat "standing

up," hanging to a strap — sixty people. Brakes were no longer a rail tied to chain couplings to avoid the back car telescoping the coach ahead, but hand brakes on each coach worked by the wheel we all remember on old cars when the brakeman scampered through each coach and with a mighty whirl brought each car to a dead stop so abruptly that sometimes your spine got the jolt, sometimes your head. Anyway, it stopped the slide along the rails, especially down grade on icy

The first buffer brake on a car wheel was the simplest possible contrivance. The platform on which the brakeman stands takes the place of the rail tied to chain coupling to prevent the cars from telescoping.

tracks. Lamps were used, though the oil did slop over in a jolt and the glass smudge in a flame. Wood had been discarded for coal in the engine, though it proved terribly hard on the iron of the fire box in sintering, splintering, blistering the iron lining till other inventions in drafts of cool air helped the fires. Bells, gongs, steam whistles, a covered cab for the engineer, had now been added to all locomotives. The engineers didn't like these cabs at first. They thought them un-

safe in case of a quick jump in accidents; and accidents were frequent.

There is a story told of the Pennsylvania Railroad in its early days, when a farmer named Slaymaker had a bull which didn't like steam locomotives, especially at night before lanterns lighted the right of way ahead for the engine, when pine knots surrounded by sand stuck up above the cowcatcher went waving past in a blaze. The bull would bellow and tear up earth. The freight train had twelve open cars loaded with hogsheads of whisky. The bull may not have liked the smell of that whisky. Anyway, he charged head down at the bottom of a thirty-foot bank. Now, the bull ought to have known better than charge up grade against an enemy coming down grade; but the bull was young and he was feeling his oats. The conductor yelled for the engineer to throw open the throttle wide. He did. Engine and bull met. The cowcatcher was a "bumping block," not the scoop shovel we have to-day. It bumped all right. The bull went head over heels off the track uninjured; but the engineer wasn't sure till he saw the bull toss that he wouldn't have to jump and perhaps take to a tree. I don't know if that is why we call the front projection of the engine a cowcatcher; but such they were called from that period. Poor Slaymaker's bull enshrined him in history. Bad weather finally reconciled engineers to the confining cab.

Before the use of the bell rope connecting with the engine, the conductor used to scramble to the roof of the cars, run forward and signal or yell to the engi-

neer for an unexpected stop. It took some agility, especially in bad weather down iced rails. The first hoot of a steam whistle was mere chance. It seems to have occurred in the testing of an engine in the thirties, when escaping steam gave a hoot before it hissed. Henceforth, says an old record, "steam was applied to a trumpet attached to the engine" — a far cry from the baying of the ram's horn to the coach passengers only ten years before in the taverns of the woods.

The tender was a truck with whisky barrels of water to be fed to the boiler through a hose of leather made leak-proof. I avoid technical terms of the sixties: first, because I don't know them; second, because if I did, the use of oil and white coal — water power — is changing all this so swiftly that our own terms of to-day will be as obsolete and confusing in another quarter of a century.

The change from wood to coal cost as great heartburnings as the use of telegraph. Men in Philadelphia had been working on it. They had turned out a coal burner in 1849 and put it on the tracks in 1855, to haul a load of immigrants across the Alleghanies for what is now Kansas. It went beautifully for about thirty miles, then sat down and, balky as a mule, refused to budge. The immigrants almost mobbed the inventors, who were on board. An old wood engine was put on the tracks and hauled the stormy passengers away to the West. The cause of the failure was so simple it was laughable. The jar had clamped down the damper so tight that the air draft was shut out.

That failure caused the two inventors a loss of eight thousand dollars. Coal stoves had in the forties taken the place of wood to heat passenger cars.

You recall the first use of rails had been to haul stone uphill on a gravity system, when the momentum and weight of the trucks going downhill carried the empties up by a chain or cable system. Then steam had proved it could climb mountains on easy grades by switchbacks, tracks going up in curves back and forward across the face of a mountain. Even in the initial test, some smart sceptic greased the tracks to prove it couldn't be done; but the engine climbed just the same at ten miles an hour. On the Harlem in New York and on the Pennsylvania in Philadelphia, small tunnels had proved that it was cheaper where the rock could be bored out and then timbered up to run a train, especially a heavy freight train, through a tunnel in the hill. Then, in 1851 to 1853, the Baltimore and Ohio bent its efforts to the most ambitious tunnel yet attempted — about forty miles east of Wheeling — to bore through a tunnel 2,350 feet long, or almost half a mile. That hill was steep. It required terribly sharp turns in the rail curves and even a twenty-five-ton engine had to puff hard to haul up two loaded cars of fifteen tons each. It was easily worked rock — seamy and friable and crumbly; but would such rock stand up in a tunnel? The tunnel had to be arched and bricked; but in the process a single rock slab would often fall and crush the life out of the men. Before the tunnel was made absolutely safe, it had cost $603,000. To-day, we regard casu-

ally and as a matter of course tunnels of seven to twelve miles, costing as many millions. Which illustrates that blood as well as water goes in what is called " watered stock." Why should the flag of steam progress not have as many gold stars as the flags of war? We don't seem to get away from the savage idea of the man-saver not being as valuable to society as the man-killer. We applaud the victory of one and forget the victory of the other. From 1850 to 1860, there were six tunnels built running from forty-eight hundred to fifty-eight hundred feet and costing from three hundred thousand dollars to a million. This takes no account of small tunnels.

You remember the first wonderful bridge at Boston where " the elegant lanterns " were to be lighted by the thrifty Puritans only " when necessary." The Roebling Suspension Bridge now spanned Niagara. Brooklyn Bridge was one of the wonders of the world; the Mississippi had been bridged for the Chicago, Rock Island Road; Andrew Carnegie was the builder of an Illinois Central bridge across the Mississippi.

The Pennsylvania Road has the credit of first putting up fine rail stations, which later became great temples of traffic surpassing in beauty the most gorgeous temples of the ancient world. Passenger stations and freight sheds now dotted the land. They had taken the place of the old turnpike tollgate and tavern in the wilderness of " the good old days " — when we grasp their mellow primitive romance but do not miss their amazing inconvenience.

Who were the conductors, brakemen, and engi-

neers? Annals of the times describe the conductor as " half clerk, half guard with a dash of the gentleman," off duty received in the best of company like the colonel of a colonial regiment or " a whip " of the old coaching days; but on duty almost commander of a regiment, whose words " Tickets, please " brought the same instant order in a car as " 'Tention " from an officer before a line of recruits. Brakemen were farmboys lured by the wonder and adventure of these race horses on rails — the yeomanry of the old-time army. Engineers were recruited and had to be recruited from the blacksmiths of every frontier hamlet; and the blacksmith in those days was not the simple knight of a mule's hind leg. He was the " mighty man of valor " with anvil and mallet and glowing fire on hearth, who fashioned all weapons and implements of iron. The fireman was, of course, an apprentice engineer; and I'd like to add that I think the Big Four did a mighty good job when they forced recognition of their old-time social status in modern life. They control, patrol, protect, defend more lives in a year than any army, or all the armies of the war ages in the past. If you look up how many passengers are carried in a year safely to far and near destinations with fewer lives lost than are crushed on city streets in a month, you will find that statement meticulously true. Have rails killed and mutilated one hundred thousand people in a year? They have not. In 1926, the record of death and deforming accidents on 285,000 miles of steel is 6,364 deaths, 47,993 injured. Of the deaths, 2,584 were trespassers

— track walkers — 1,299 employees. Of the injured only five thousand were passengers. In 1927, the record for motors was one hundred thousand. On rails for 1927, the record of passengers killed was the lowest ever known — only ten. Highway fatalities — chiefly from rash motors — still continue high.

How much had been invested in rails up to 1860? The best authorities give it up to a billion dollars for thirty thousand miles. That was a heavy investment for thirty years and explains the coming crash. Those Middle West rails helped by land grants were paying good dividends: the Chicago, Burlington and Quincy, sixteen per cent; the Chicago and Milwaukee, ten per cent; the Rock Island, ten per cent; the Illinois Central, five per cent; the Michigan Central, ten per cent; and those high dividends paid when outlay was so constant may also help to explain the crash now visible. Georgia rails, too, were very prosperous, partly owing to high rates, six to eight cents a mile, partly owing to the chain banks and rails, when strong links held up weak ones and securities could be sold in Europe.

Here is a panegyric of the period on rails:

"Railroads have been the great pioneers of civilization. . . . They have overcome distance. . . . They have linked distant communities in golden chains. . . . They have spread the light of learning as from a distant sun. . . . They have made peace more peaceful. . . . Hours are but moments. . . . The mighty weights which break the sinews of beasts of burden are to them but bubbles sporting on billows

of strength. . . . The cry of weariness comes not from their iron mouths as they thunder over the plain, leap across the river, roll over the hills, or dart through the mountains."

There was much to justify such jubilation; but jubilation is always perilous. It necessitates the next jump to hold the triumph.

There were still people in St. Louis who lauded canal travel as far superior to rail or coach.

"When the packet boat came gliding to the locks, her captain gave the order 'Snub her!' Not to be despised were those packets. Kitchen at the stern, table from end to end of the cabin, three square meals a day, at night a double tier of shelves for beds — what was this but comfort and luxury? Eating and sleeping and the journey going on! . . . True, cars are elegant and sumptuous and roll along faster than serene packets; but you can't go on deck to sit on trunks, sing in the moonlight or duck heads at the cry of 'Low bridge.' Nor can you enjoy scenery from car windows at 40 miles an hour as you could from the gliding packets."

Far otherwise recorded Horace Greeley:

"The nights were tedious. . . . At daybreak you were routed out of your shabby shelf-berth and had dinner on deck to swallow fog, while the cabin cleared and made ready for breakfast. . . . If anyone would recall the good old times, I object."

Chapter XVI
The Wheel On Steel In The Middle West. 1840–1870

TAKE an aeroplane view of Chicago.

Try to imagine some future archeologist.

Your far future archeologist looks down on what is now Chicago.

He sees the lake blue as the Mediterranean in the sun, but muddy as he swerves down closer, churned by countless ships of every size and design under the sun — ships that are iron whales spouting oil into equally huge round towers; ships that are giant arks pouring floods of grain yellow as gold into higher towers; ships that are leviathans dumping iron ore at waterside amid belching flame and smoke; structures in marble and concrete and steel emitting lurid fiery glare to the clouds in volumes that darken sky by day and set the firmament on fire by night. It is quite plain to the dullest archeologist this must once have been a slough of sand and mud; for the breakwaters hold back the lake and canals draining through the heart of the great city. It is equally plain that Man — little Man, whose life span is as the grass that withereth, or the spark that goes out in the dark — accomplished all this transformation.

Many types of architecture are here — the Chaldean tower piercing through the clouds, the Greek flat or arched roof, supported by circular columned pillars that dwarf the little creatures below to the size of flies. Instead of the gold-rimmed wheel-

chariots of the ancients with champing steeds, are little black leather-covered coaches on wheels with never a horse to draw, but a driver behind each coach nose sitting with hand on a pilot wheel. It is equally plain to the archeologist that such a vast city must have been created and supported by a vaster empire encircling it; for here are proofs of iron ores in exhaustless bodies, of coal in a region where wood is sparse as in Chaldea, of wheat — wheat in such volumes that the puzzled digger for facts grows dizzy. He gets out his pencil and doubts his own vision and figures. Why, Noah's Ark was a child's toy compared to some of these towers and ships! Here is a vessel that must carry a half million bushels of grain; and a half million bushels of grain must have come from at least twenty thousand acres; and twenty thousand acres imply at least one hundred farms. This vessel is only one of many, and the cargo of one hundred farms is in its hold.

The thing is impossible. A Chaldean camel could carry at most only three to four hundred pounds of grain — that is, five bushels of wheat. To bring to this mart the grain on a single ship would require one hundred thousand camels; and this ship is only one of countless. There were not enough camels in the ancient world to carry in a year the grain coming into this port in a single day. There were not enough camel drivers from India to Egypt. There was not enough pasture across the desert to feed the camels.

Knowing there is a whole school of fellow scientists alert to challenge his figures, the archeologist sweeps

down closer. He credits neither his eyes nor his nose. There are great lumber yards with the whiff of forest fragrance imprisoned in their piles. Have they, like the cedars of Lebanon, been conveyed from afar? This is not a forested land. What sort of conveyance had these amazing ancients of Middle America? Then the fish from the Atlantic, fish from the Pacific — fresh fish; bananas and avocados from the tropics; berries from Texas and Washington; oranges from California; apples from one to two thousand miles distant fresh as the day they were picked. Then he sees that away out to the east and west and south of the main city are suburbs extending farther than ancient Babylon's — houses that are palaces, houses that are little gems set in gardens, slave quarters none, the smaller houses and estates spreading out farther apart till they mingle with country villas of every variety from humble farm home to grand estate.

Then he sees the conveyances — long lines of box cars on steel shuttles running at incredible speed — such speed as the longest-legged, swiftest camel ever known could not pace!

Amazing! And all accomplished in seventy-five years; and no slave labor and no far foreign possessions taxed and looted and plundered to divert the floods of wealth and luxury here! Statuary and paintings in the art galleries from every land in the world. Schools and colleges exceeding in beauty the far-famed temples of learning in Alexandria and Ephesus and Babylon. Stadiums for sports with tiers of seats

going up high as the Babel tower of the ancient East, commanding arenas vaster than the East ever knew. He might get a shock at the automatic slaughter of animal life in the Stock Yards; but he would not get the worse shock of ancient eras, when human life was sacrificed in arenas to the howling delight of hyena audiences, who scrupled at animal diet in a hot climate, but had no twinges of conscience over thousands of war prisoners tossed in the arenas to butcher one another, or be butchered or torn to pieces by wild animals turned in ravenous with hunger. At worst, he might see two men stripped to sandals and trunks knocking each other about with gloved blows, and bloody noses; but he would not see armed gladiators slashing one another to death till the sands of the arena ran red.

He might infer — I do not say he would — that progress had been pretty much regulated by the Wheel; and that this wheel on steel certainly had been a spiral up. If he took a look at his own wheel below his aeroplane, he would be dead sure it had been a spiral up — with many a tail-spin and many a head-dive down, but still a spiral up.

Now come back to Chicago in the early fifties.

The Illinois Central had poked its shuttle south to the Ohio, west to the Mississippi, east to connect with another shuttle from Michigan, which gave it contact with the lines from Boston and New York, just as its Southern links gave it contact by water and presently by rail with Baltimore.

But how did that line come from Michigan? Michi-

gan had not been particularly fortunate in her state-owned rails. One, costing two and a half millions, she had been glad to sell for two millions. Another costing more, variously estimated from two to five millions, she had sold for a little over twenty thousand dollars. Neither was earning enough to pay repairs. Here begins the story of several more of the land grant rails. Keep in mind that each was built primarily and solely to aid the Western farmer to gain access to markets. Not one foresaw remotely the gain in prices from the Crimean War of the middle fifties or the Civil War of the sixties. Not one could foresee the enormous traffic from coal beds not yet opened, from petroleum not yet known, from Pacific lumber areas not yet entered; but without the coal, without the petroleum, without the lumber, ninety per cent of these lands could have been neither settled nor sold. They could not have been inhabited; for they had no fuel and were too extreme in winter climate for the makeshifts of the Orient in mild winters.

And the Michigan roads, oddly enough, through purely individual effort began the story of the Burlington and Quincy. In Boston dwelt a great friend of Lincoln's — John M. Forbes. He is the father of the Burlington. He had been born about the middle of the War of 1812 and passed away in 1898. He knew what rails westward had done for Boston. They had saved that city's commerce from ruin. In spite of enormously expensive mistakes in construction and foolish state laws, they had restored that city's pros-

perity. He had unbounded faith in rails. As a boy he had gone in the clipper ships to China, where his services to a Chinese mandarin were marked by such integrity and good faith that by the time he was twenty-four he had come back to Boston with a fortune and become a private banker. John Brooks had been a civil engineer on that link of the New York Central from Auburn to Rochester and was now scouting round in the West as adviser to several state-owned rails. It was on his advice that Mr. Forbes, in 1846, then in his thirty-third year, had bought that Michigan line from Detroit to Kalamazoo for two million dollars. Imagine a man of thirty-three already on easy street with the nerve and vision to throw two million in the sink pot of a total failure. Of course, it took vastly more cash than Mr. Forbes' slender fortune to build up the decrepit links of the Burlington. It was the savings of New Bedford, Salem, and Boston fisherfolk, which went into the Burlington treasury; but it was Forbes' reputation for integrity that drew these savings out of the banks and teapots and stockings in New England to go into the treasuries of Chicago's decrepit roads. Take a look at the man's face — a strong profile of New England granite, piercing but straight and infinitely kind eyes, the clean-shaven jaw of the period, but lips of bulldog strength, a face that could no more be guilty of rascality in finance than it could of murder. The Michigan road was in deplorable condition. The tracks were rotting wood. The iron straps were literally " tonic for the cows," humping up in barrel

hoops between loose spikes; and the engines were derisively called " tea kettles." Daniel Webster wrote the charter for the new company. Tracks were relaid of heavy T-rail iron, though iron cost all the way from eighty-six to two hundred eighty dollars a ton. Buyers paid what they must; and iron rails from England had to bear a heavy traffic rate across the ocean, and a heavy shift rate from point to point across the lakes, or up from New Orleans. It was no easy job — team, lake, river; freight; but the Michigan Central got into Chicago by 1852.

Now some Aurora people had a charter in 1850 to build a little twelve-mile road to West Chicago. Never mind its name. You'll get its modern name presently. It was a pathetic little road. It had lots of hope and lots of faith, but no cash; but it was better than pig wallows with a sign stuck up " No bottom here." Every shareholder had to be personally responsible for its debts. They had to buy second-hand strap iron for the rails. A second-hand engine and a passenger coach and some six freight cars borrowed or rented were all they could afford; for they had to dig down in their pockets for every single cent spent; and real coin was scarcer than turkeys or ponies. Mr. Wadsworth, a merchant of Aurora, seems to have been the moving spirit. Naturally a merchant teaming goods over roads with " No bottom " would prefer strap rails, however bad, for a highway. He, too, had been in Boston buying goods and had met young Forbes. Forbes sent him to Brooks, who was in Detroit. Brooks took a look over the baby road, told

the good merchant of Aurora that if they could get their state charter amended to permit the road to fix rates at its own discretion for passenger and freight so it could pay, he would advise Mr. Forbes to take hold. He could see it a future link to the Mississippi and Missouri, whither settlers in their tented wagons were trekking with the sign " Oregon or Bust." From that advice in 1855 was born the Chicago, Burlington and Quincy. Perhaps I should say the baby was the Aurora line and the christening the Chicago, Burlington and Quincy. Anyway, there the sturdy infant was, revived, reaching out its hands for that caravan of freight now going westward by wagon to Iowa and Nebraska and Minnesota; but it didn't grow up all at once. Indeed, it grew very gradually; but it did pay its way as it grew — seven to ten per cent, and sixteen per cent in panic years, with the stock never sagging below 98 to 90. It paid in genuine earnings on genuine cash investments and used its yearly surplus to replace rotting wood tracks with iron and later steel, " tea kettle " engines with engines good for forty to fifty miles an hour on level ground, coaches that seated sixty people, freight cars that carried twenty tons, sidings, way stations and car shops of its own. It is quite impossible, though record is fully given in its annals, to tell the story of each link; for the Burlington is made up of two hundred three links. Some of them it bought as bankrupts when prices crashed after the Civil War. Some it bought openly when bonds and stocks were a drug on the market, one where bonds had fallen to four-

teen cents on the dollar. Some it built to connect up links till its twelve miles had extended to nine thousand, covering eleven states in the Middle West, and two thousand more miles reaching out southeast through Georgia to the Atlantic. From one little way station, it grew to have one thousand six hundred. In the amazing period of Mr. Forbes' life, from 1813 to 1898, he saw it stretch from Billings, Montana, and St. Paul south to Colorado and east to Georgia, and he witnessed the growth of its carefully guarded assets from a few thousand dollars to a cash investment from earnings of five hundred sixty-two millions. It can truly be described as one of the first great diagonal lines across the continent from northwest to southeast. From one little " tea kettle " engine burning wood, bought second-hand and renamed the *Pioneer,* hauling a single passenger coach and a few cars of mixed freight once a day, it grew to number four hundred fifty passenger trains a day carrying in a year eighteen million travelers. Poor little *Pioneer.* It had a single pair of big driving wheels, four little wheels forward abaft the cowcatcher, and a little trailer behind with wood. If you think railroad men are poor plugs on the day's job without the imagination of a plodding ox, I wish you would look over the names and the christenings of the subsequent engines. The wood burners were *North Wind, South Wind, West Wind, Gray Eagle, Golden Eagle* with brass bells and shining brass rods. Then in 1856 came the discovery and use of bituminous coal found in its own areas; and the gay brass rods had to be painted

The arrival of the iron horse on the Western plains filled the Indians with awe. Prairie ground, level and easily graded, gave the Chicago, Burlington and Quincy a great advantage from the first.

black; but there were awful heartburnings about the use of coal. It won because wood was scarce, coal abundant, the saving in costs half, the saving in labor half, and though the engineer and fireman were pretty badly smoked up, that did not dim their imagination, for as the combined wood and coal burners came on the line, they were named *Stag Hound, Antelope, Reindeer, Panther, Arab, Whirlwind, Hurricane, Tornado;* then *Lion, Tiger, Samson, Starlight, Moonlight;* and if you look at old pictures, you will see the proud train crews standing on the cab roofs waving an American flag; and their prouder ladies — presumably the ladies of *Starlight* and *Moonlight* — standing in the picture below the cab steps with parasols and silk sashes and polka-dot gowns of the very finest Sunday best. It was not till the coal and oil era that the big headlights — the great glaring searchlight eye strengthened by metal mirrors behind to focus on the track ahead — became general.

Prairie ground, level and easily graded, gave the Chicago, Burlington and Quincy engines a great advantage from the first. It could use greyhounds for speed. Till it reached the mountains, it could build engines for speed over the level with great hauling power; and if you take a look at their later engines, the acme of grace and beauty — low set with smoke vent hardly higher than bell, long and slender of body, with powerful electric headlight illuminating tracks for almost half a mile, and speed of forty to sixty miles an hour — you will agree they are greyhounds by moonlight or starlight. When I add that

some can pull one hundred fifty cars, you can figure for yourself how long a camel caravan would take to carry the same load at fifty miles a day.

The men Mr. Forbes picked as his aides, he picked as they proved their fitness. Mr. Perkins had been a freight clerk at thirty dollars a month — which illustrates the old adage, Once a railroad man, always a railroad man. It is a life job. And ponder the next fact. Follow their leader with the vision of a prophet? They had boundless faith in his good judgment; but invest in the cheap lands of the new territories the line was penetrating? — That was another matter. They had faith in him; but those lands — not on your life! The speculators who trailed along Mr. Forbes' line made larger fortunes in land than Mr. Forbes and his associates did in the Chicago, Burlington and Quincy. The story goes the rounds that it was someone — contractor or surveyor — for the Chicago, Burlington and Quincy, who could not trade a hundred twenty-five dollar hotel bill for one hundred acres of Chicago land. Of her land grants, the Burlington was credited with over three million acres besides other grants that came as debt-encumbered legacies with bankrupt roads that were bought. The 358,424 acres to which it fell heir in Iowa were sold at seventy cents an acre. Those same lands were resold by their owners in the Great War at two hundred dollars. Nebraska lands were sold with difficulty to cattlemen at twenty-five cents an acre. Why did Mr. Forbes with his acumen and foresight and faith in the West sell lands for such a price, when the gov-

ernment upset price on the lands between the rail sections was a dollar and a quarter? For just one reason. Ponder it! It always pays a railroad more to get settlers on land and get the traffic of what they sell and what they buy than to hold land for a future increase in values. The yearly traffic is a revenue for all time, swelling as the country grows. Idle lands may be good collateral for bonds; but they are not revenue producers; and every railroad must pay as it goes and grows — or go " broke " to the tragic loss for its investors.

That characteristic of speed brought to the Chicago, Burlington and Quincy the award in 1884 for one of fastest, surest mail routes in the world, from Chicago to Omaha, a schedule of sixteen and one-half hours, which has run without interruption of a single day for over forty years. Unless we go back in history, we have little idea how keen was the competition for the honor of a fast mail record.

Go back to the days of the pony express mail. Read from the Missouri *News:*

" In the winter of 1860 there was a Wall street lobby at Washington, trying to get $5,000,000 for carrying the mails overland one year between New York and San Francisco. The proposition was extremely cheeky, and William H. Russell, backed by Secretary of War Floyd, resolved to give the lobby a cold shower bath. He, therefore, offered to bet $200,000 that he could put on a mail line from Sacramento to St. Joseph that should make the distance — 1,950 miles — in ten days. The bet was taken and the 8th of April fixed upon the day of starting. Mr. Russell

called upon his partner and general manager of the business upon the plains, Mr. A. B. Miller, now a citizen of Denver, and stated what he had done, and asked him if he could perform the feat. Miller replied: 'Yes, sir; I will do it, and do it by a pony express.' To accomplish this Mr. Miller purchased three hundred of the fleetest horses he could find in the West, and employed 125 men. Eighty of these men were to be postriders. These he selected with reference to their light weight and their known dar-

The pony express was the swiftest mail carrier of the Far West in the fifties. Horses were stationed from ten to twenty miles apart and each rider had to ride sixty miles.

ing courage. It was very essential that the horses should be loaded as light as possible, therefore, the lighter the man the better. It was necessary that some portions of the route should be run at the rate of twenty miles an hour. The horses were stationed from ten to twenty miles apart, and each rider would be required to ride sixty miles. For the change of animals and the shifting of the mails two minutes were allowed. Where there were no stage stations at proper distances, tents sufficient to hold one man and two horses were provided. Indians would sometimes

give chase but their cayuse ponies made but poor show in their stern chase after Miller's thoroughbreds, many of which could make a single mile in a minute and fifty seconds." [Perhaps we should question the enthusiastic figures of the old annals; but I quote them such as they are.]

"All arrangements being completed, a signal gun on the steamer at Sacramento proclaimed the meridian of April 8th, 1860 — the hour for starting — when Border Ruffian, Mr. Miller's private saddle horse, with Billy Baker in the saddle, bounded away toward the foot hills of the Sierra Nevadas, and made his ride of twenty miles in forty-nine minutes. The snows were deep in the mountains, and one rider was lost for several hours, in a snow storm; and after the Salt Lake valley was reached additional speed became necessary to reach St. Joseph on time. From here on all went well until the Platte was to be crossed at Julesburg. The river was up and running rapidly, but the rider plunged his horse into the flood, only, however, to mire in the quicksand and drown. The courier succeeded in reaching the shore, with his mail-bag in hand, and traveled ten miles on foot to reach the next relay. Johnny Fry, a popular rider of his day, was to make the finish. He had sixty miles to ride with six horses to do it. When the last courier arrived at the sixty-mile post out from St. Joseph, he was one hour behind time. A heavy rain had set in, and the roads were slippery. Two hundred thousand dollars might turn upon a single minute. Fry had just three hours and thirty minutes in which to win. This was the finish of the longest race, for the largest stakes, ever run in America. When the time for his arrival was nearly up, at least five thousand people stood upon the river bank with eyes turned toward the woods from which the horse and its rider should

emerge into the open country in the rear of Elwood — one mile from the finish. Tick, tick, went the thousands of watches. The time was nearly up. But nearly seven minutes remained. Hark! a shout went up from the assembled multitude. 'He comes! he comes!' The noble little mare, the Sylph, the daughter of Little Arthur, darts like an arrow from the bow and makes the run of the last mile in one minute and fifty seconds — landing upon the ferry boat with five minutes and a fraction to spare."

Why such a prosperous road was ultimately sold to the Hill system but left intact under its own management will be told as the story goes on.

As I write, it is the middle of a beautiful New England winter, but in the midst of the mild weather has broken a sleety foggy night, very picturesque in ice and snow on the hedgerows and drooping antlered elms under the dim light of the electric bulbs winking in the mist, but very dangerous on the asphalt and concrete roads glazed in ice. Though this is one of the most traversed roads in the United States outside the City of New York, not a motor has passed for five hours. I hear the far scream of a fast freight express bearing New York's breakfast milk to the great city, over icy rails, round curves down grade through the white darkness with a train crew of perhaps ten men. It is like the lonely cry of the midnight trains we used to hear tearing across the white wastes of the prairie through tornadoes of blizzard and snow in the early days — hear and hug our blankets and thank God for shelter on such a wild night, or

strike a match to see if watches were all right; for whatever our watches did, we knew we could regulate them by the fast express freight and fast mails. I listen as the train crashes down through the New England hills with the roar of a wind in the trees. Another scream stabs the white whirl at the crossing; and the palpitating echo of the train through a narrow cut dies away; and I think back to those pony expresses before you and I were born. Somehow, I again thank God for progress by whomsoever wrought or however wrought in all its deviating wandering zig-zag of honor and dishonor, of heroism shining like a star on a dark night, or cunning financial crimes black as ever written in the indelible ink of infamy.

One could go on and tell the story of the other land grant rails, such as the Chicago, Milwaukee and St. Paul, the Chicago and North-Western, the Chicago and Rock Island, radiating out from Chicago; but their story would largely be similar to that of the Chicago, Burlington and Quincy or the Illinois Central. The difference is that none of the others was bound by charters so advantageous to the states as the Illinois Central.

None began under the names by which we know them to-day. None had been able to go ahead without land grants. Each began as a farmer's market highway in such baby links we would hardly regard them as tramways round city squares. Each ultimately became a diagonal road more or less north and south rather than as the Atlantic rails had built, directly east and west. Each had stretched out its

fingers like a child's hand till, full grown, it covered from Chicago to St. Louis southwest, to the far Dakotas northwest, to Lake Superior north, and in one case to the Pacific Ocean. The Chicago, Milwaukee and St. Paul was at first purely a Central Wisconsin line to give the farmers open way to the markets of Milwaukee and Chicago. It ended on the North Pacific. The Chicago and North-Western began as a line across from the Lakes to the Mississippi and was presently diagonally across the states from Iowa to the Dakotas, with another finger up to the mines of Lake Superior. The Chicago and Rock Island pushed across the states between the Lakes and the Mississippi-Missouri system; and luck in each case favored the dauntless. Ores, coal, lumber filled the empty box cars to the West when farm produce filled them to the East. Traffic in the Civil War helped swift expansion in the trying period of outlay during fast growth. Then as the lines in the South banded across the almost uninhabited Southwest, these Chicago roads were ready for the great traffic to and from the land of gold to Atlantic lines now as far west as Chicago and St. Louis. Each paid dividends to its investors as it went ahead, which explains why it could raise money to go ahead. To the present time, roadbed and equipment are a monument of excellence to the builders, who drained the East of its best army and civil engineers and became schools for a later generation of builders for the West.

One we shall learn, the Chicago and Rock Island, later " fell among thieves and was stripped." Another,

the Chicago and North-Western, stands as it was founded, prosperous and unimpaired. The third and greatest of all, the Chicago, Milwaukee and St. Paul, which should be called the Roman Highway of the West, came to grief in one of the greatest, unforeseen tragedies of rail history; and it makes the tragedy none the less galling and blasting to learn that it fell through the perfectly good intentions of its best friends and dragged them to ruin in its crash.

People have a way of speaking as though American roads were the only ones in the world to suffer from the vulture era in rails. This is not true. There is not a system in Great Britain which did not go through the same period impaired. Links had to be added to links. Profitable links were hitched up to unprofitable links, and the good lines loaded with the debts of the losing line, and the stocks and bonds for the whole system sold to the public at enhanced prices for which there was no justification. In a century, which witnessed a Crimean War, the national struggle of Germany, of Italy, the fall of French values owing to the great defeat at Sedan — the swings of rail worth were so great that purely speculative gamblers played their game in Europe as in America.

I once chanced to be the guest in London of a stock broker's family whose father had been a specialist in rail securities all over the world. We were discussing the building mania going on in both North and South America up to the early nineteen-hundreds. As the world knows, losses had been very

heavy to the British investor, especially in depreciated bonds, which the British regarded as almost fool-proof. "Look here," he said, taking a map of England and Scotland and tracing the North and South, East and West systems. "What different is that from our own record? Here is a line — " I forget how much "watered stock" he said had been injected in a great North and South system. "It recovered, of course, as traffic caught up with inflated capital. When people fling good bonds and good stocks to the winds as they did after the Crimean War and after France's defeat by Germany, speculators, rascals, solid investors pick them up. The pools and speculators get out, of course, at high and let the public take its loss at low; but if the solid investor sticks long enough he beats the game in the swing back. Fiduciary institutions take great risks buying and loaning money in such periods. If their judgment has been good, they are applauded. If bad, they are execrated as thieves and swindlers, and may come within the law for penalties."

PART V

The Vulture Era Begins

Chapter XVII
The Triumph Of The Erie. 1850–1860

THE story of rail's progress westward now brings up the ominous black-winged shadows of *why* any tragedies among rails. Where the carcass falls the vultures gather; but what brings a palpitating vital thing down to a rotting carcass on which vultures and wolves feed? "The curse causeless does not come"; but that is one of the platitudes to drive the innocent victims of the curse to blasphemous, furious antagonism.

And that harks back in the amazing shuttle that was now going on in the East, transforming the very fabric of American life, while the West was jumping from triumph to triumph.

This is one of the saddest stories in American rails, also one of the most hopeful. At the end of the dark and slimy trail is the open highway of almost a century's blasted hopes, endeavors, failures, falls, recoveries, falls again, phœnix-like ascent, over and over to our own day.

It is the story of the Erie.

No narrative in all tragedy, in all comedy, heroism, villainy, pluck, determination, piracy, grandeur in character, picayune thievery, penniless adventurers, fakirs, gods or devils, from vultures plucking out the entrails of a Greek hero to a modern polished plausible scamp blowing out his brains in a lonely house on the Western prairie — can surpass the human story of the Erie. There are a dozen true novels in any ten years of its history. A Shakespeare

could have written a comedy on any era in its record, and a tragedy on its very next period.

If one were a fatalist, it would be easy to believe that Mars and Saturn and Jupiter and Venus presided at the Erie's birth when the first spadeful of earth was turned up at Deposit, New York, and had been fighting for victory ever since.

Clear your mind of the idea that *all* Erie's ills came from the Gould-Vanderbilt-Fisk-Tweed fights. They did not. They arose just as much from its sponsors; and its sponsors, from its first president to its latest, have been the highest-minded, cleanest, clearest, most successful business men of each generation. They have been more. They have been men of the cleanest morals in public and in private — cultured gentlemen, who left their mark for good on every other venture they touched. Why, then, the Erie?

Clear your mind also of the idea that Erie's ills arose from the wild sons of Erin who were its first builders, and could no more go to sleep of a Saturday night without the gangs from Cork breaking the heads of the mobs from Ulster, than a boy full of plum pudding can refrain from kicking in his sleep. If you go among the crews of the Erie you will find the esprit de corps of one big loyal family. This has been the case from the first rail — pride that was personal in their own line. The crews felt they owned it and always had, though in its early days it was often in arrears for pay as long as three months and numbered as many bitter strikes as any dozen other short rails. Again and again the local militia had to

be called out to settle those strikes. Its construction engineers have been among the most distinguished men in a century. Half the best devices and inventions of the rail world have come from the Erie and its graduates.

Begin with a spadeful of earth turned at Deposit, a century ago; and keep clear as a sheet of white paper the shape of New York State resembling a flag flying west with its narrow pole down the Hudson and the rails first built lying in a stripe close to the Lakes leaving all the southern stripes of the flag marooned without highways, and cut from New York City by New Jersey and Pennsylvania.

Living in New York was Mr. Eleazer Lord, a staunch Presbyterian of Andover and Princeton, who had been kept from going in the ministry by a slight weakness in his eyes. Before he was thirty, he had been one of the founders of Foreign Missions, of Sunday schools, of the American Bible Society. Before he was thirty-five, he was the personal friend of Wilberforce, Canning, Macaulay, and Baring the banker. He had helped to frame the first American tariff system and was president of the Manhattan Fire Insurance Company. Before he was forty-five, he had written, in 1829, one of the best books on currency and banking. That doesn't look as if the Erie chose fools and knaves for its leaders. Eleazer Lord was father of the Erie. He was all that embodied the very best in American life. Having traveled over Europe, he knew what rails were doing for Europe. He knew that a rail tapping one narrow tier of New York State

couldn't build up the great city. It must tap all New York State and all the West to the Lakes. From his country home at Piermont on the Hudson, he must have watched the beautiful river steamers equipped for great numbers of passengers and volumes of freight plying up and down between the Erie Canal and tidewater. He must have watched and pondered much. It meant a five hundred mile rail leap from the city to the Lakes diagonally across three states. Perhaps that was his first mistake. Five hundred miles would not be a long rail leap to-day, but in the thirties it was longer than Lindbergh's flight to Europe.

Perhaps his second mistake was that he underestimated the difficulties of building through narrow canyons of solid rock, of crisscrossing by bridges wild mountain torrents that filled with fifty-foot drifts in winter and swept away frail trestles in spring. Tunnels and fills and concrete steel bridges conquer such foes to-day; but long tunnels and fills and steel were unknown in Lord's day, and rail engineers had to be drawn from the army or developed.

Perhaps his next greatest mistake was that he could not possibly foresee New York City would ever extend much beyond Fourteenth Street. Why should his dream road buy the little dinky Harlem tramway with its modern New York Central right of way through the city, now valued past the wealth of many an ancient kingdom? Had the Erie bought that entrance to New York, it might have averted the fearful losses of later fights with Vanderbilt, which cost it millions, and the still later needs of dockage and

terminals in New Jersey which cost it more millions in its very neediest period and forced it to pay both whitemail and blackmail to the shyster political rings of two states. Lord was not president at that time. He had just resigned under assaults of bitter criticism; but his successor was one of his own hand-picked vice presidents.

"A year to a day" before the charter of the Erie, the Harlem had been chartered to go from what is now Twenty-third Street anywhere between what are now Third and Eight Avenues out to what are now the Bronx and University Heights. The charter was changed to go up from the City Hall to Fourteenth Street. In the early forties the Harlem came to a stall owing to the panic of 1837–39 and its backers came to Lord with an offer to sell the whole project and all its rights for ninety thousand dollars with, of course, the obligation to go on up the east side of the Hudson. No member of the Erie board, of whom Lord was still a dominant voice, cared later to acknowledge the costly mistake of refusing that offer. The real reason was doubtless the pocketbook. There was exactly $201.33 cash on hand at the time. The Erie was pledged to go up the west side by the Delaware and Susquehanna, through Western New York to the Lakes. To have changed the route then would have brought every Western New York county and town down on the Erie's already overburdened officers. It is only another example that railroads must be built by rail men for traffic and not by amateurs for local favor.

Hindsight is always wiser than foresight; and if progress halted for every lion in the way, it would not be progress. Lord's other two mistakes really resulted from lack of engineering experience. He saw that on such grades as the Erie must climb to reach the Lakes, it must have powerful, heavy engines. Therefore, he insisted on a six-foot gauge, which again cost the line millions in cars and engines and replacement of rails for the standard gauge. His next mistake was sheer lack of money in the treasury to go ahead; and go ahead to the Lakes at all costs he must or lose the Erie charter. When he struck swamps and bogs, in view of the cheaper cost, he insisted on pile-driven trestles. He could not know until it was tried that when driven some of those piles could not find bottom; and that loss totaled more millions; but at the time, he had as advisers some of the greatest engineers in the country, like Horatio Allen, who had brought those first locomotives from England and in 1829 had run one in Pennsylvania across a curved trestle at the risk of his life where not a passenger would cross with him. Allen, like Lord, was a young man — only twenty-six when he performed that feat. He had been a rail engineer in Pennsylvania, in South Carolina, in New York, and was consulting engineer on the Erie until his death at East Orange in January, 1890, at the age of eighty-eight. Eleazer Lord's life covered almost as great a span, from 1788 to 1871.

Long agitation for a road in Western New York had preceded that first spadeful of earth at Deposit. It was to be such a great Appian Way as the Romans

built. It was to reach westward — yes, even to the Mississippi. Wasn't Horatio Allen planning that down in South Carolina between Charleston and Hamburg? Why not New York? Among the petitioners for this road through Western New York you'll find such names as have since made New York famous — Churches and Tiffanys and Harpers and Ogdens and De Forests and Roosevelts and Whitneys and Redfields and Lorillards and Stewarts and Hoyts. Indeed, the daughter of Professor Silliman of Yale wrote in 1831 to her father — "*If they get it* [the railroad] *it will be annihilating all time and space . . . Buffalo to New York in twenty-four hours. You may smile but I assure you it is all true.*"

The capital was to be ten millions. After a half million had been subscribed, the company could organize and begin. It almost reminds one of the Pied Piper of Hamelin leading the little children dancing with his weird music to — Nowhere. No land grants. Land grants for rails were unknown in 1832. But, bless you, the Erie must not connect with rails of Pennsylvania and New Jersey that might drain away trade to Philadelphia. But when the subscriptions came in, they added up $9,880! High hopes but short on cash! Donations for land along the route were equally puny. Some came. Many did not. Capital was shy as it was scarce. The company did ask for a land grant in 1834, but it was flatly refused by Congress. One wonders, would the Erie have fallen among thieves if it had been helped. We can hardly dignify as more than villages any of the towns along its line.

Binghamton had two thousand people. Elmira had three thousand. The great industries were lumbering and farming. It was thought the road could be built for about five millions, and the other five millions could go into equipment and stations. So far, first efforts resembled a child's plans for a house — cardboard for granite, no ruffian big brother to knock it over; and wrens and canary birds inside. Still the wrens and canaries twittered the songs of hope at nest-building time. The only cloud on the horizon was that competing canal stocks were selling very high. By 1835, over two million dollars had been subscribed, of which $118,105 had been actual cash, in about as large installments as canaries and wrens carry to their nests. By way of showing they were sincere, the directors determined to break ground at Deposit. The work was to go ahead on the longest line in the world at the time, in forty-four subsections let to twenty-six contractors, and as the lady wrote to her father, " you may smile," the day the first ground was broken for forty-four sections there was in the bank just $196,409. In my own family is a member who at two years of age set out to see the world with a sandwich in a baby's tin pail. She has since seen much of the world; but she didn't do it on that sandwich.

At sunrise on November 7, 1835, on a clear frosty morning, the chief director predicted that " this beautiful meadow will in a few years present tracks of of rails . . . cars passing and repassing " and so on and so on and so on; and a wheelbarrow of dirt was

spaded up and trundled away, for all the world as you see children play. Then, in December, there came to New York a fire that swept the lower city and consumed in its flames the resources of nearly all the Erie shareholders, followed by the twin panics of 1837–39, with a legislature at Albany favoring canals and against rails. The legislature at most would help the Erie with only one dollar for every two dollars the subscribers put up. An assessment of two dollars and fifty cents was called to pay the clamoring contractors for outlay long overdue; and that assessment was pulled from unwilling pockets about as joyfully as a stubborn tooth that has to come out in sections. What fine old fathers of finance performed the painful operation — Lord, and Stevens of Hoboken, one of the Grinnells, two Astors, a Wetmore, an Ogden, a Lorillard. The Erie's debts were a trifling thirteen thousand dollars. One may be spared the details of extracting money from subscribers for the next few years. It was about as picturesque as a man in a dentist's chair; but Eleazer Lord was the heartless dentist who extracted the unwilling coin. It was about this time that he insisted on the six-foot gauge. That mistake later cost the Erie twenty-five millions in replacement. Then from reasons of economy came the pile work in a swampy section for a hundred miles on the Susquehanna area. Not a rail was ever laid on those piles, for the still better reason that no locomotive engineer would drive a train over such a sinkhole trackbed, though I have traveled over many such, since filled in, during the pioneer days of the

West, when you felt every pole groan as the train labored its swaying course, and you began to wonder where you filed your last will and testament.

Gay, brave, dauntless days but long sleepless nights that left young heads snow-white. No wonder Eleazer Lord let his next lieutenant take charge for a breathing spell; and right then, with an empty cash box, came the offer of the Harlem, priceless in value, for ninety thousand dollars cash. People ask to-day why the fools didn't suspend contracts on other sections and grab the offer with both hands. First, because the contractors would have sued and that would have instantly wrecked the Erie. Second, because if work had been deferred on the western sections to go ahead on the New York City end, the Erie would have lost the support of all Western New York and been voted fraudulent to its charter at Albany. If a master mind had risen — a czar, a despot, a leader who would break fool laws or fool heads — the Erie might have averted that appalling blunder; but the despotic czar type of leader had not yet come into the rail world; and there are many losers on investment who will say, "More's the pity!" When Puritan Boston could blink at fool laws and go ahead west, why couldn't Dutch New York? I do not know except they didn't. Contractors were now working on only part pay down. Shareholders' stock down to 78 had to be used as security to borrow that part pay. The Erie was not stalled. It never did stall; but it was floundering waist deep and sinking deeper at each step. All that saved it from disappearing miles

deep in the bog of its accumulating debts was that the twenty-five miles already laid did pay. So desperate was the Erie in 1842 that a call was issued to the citizens of New York in this ominous language: "*Citizens who are unwilling to be robbed of the trade of the Great West by the Bostonians will manifest it by attending this meeting.*" This was only seven years after those wheelbarrows of mud had been trundled away at sunrise in Deposit. Did the citizens of New York respond? They did not. They were all still for the Erie Canal, and the public prints howled to high heaven of "horrible mismanagement and ruin." No details given; but the Erie was ordered to be sold in a foreclosure sale for forty-one thousand dollars interest defaulted on debts. The big parties were lining up for a state election and the fight was pretty much Railroad — *Anti*-Railroad. Then, indeed, the railroad was in the slimy messes of politics with "No bottom here"; but there were those western counties to be heard from at the polls; so the actual sale was postponed. There must be a gesture to conciliate those western counties. Horatio Allen was called in as adviser. The directors' meeting might have been a funeral dirge. Here were the words of one director: "*We were building a rail road that was to cost millions. We hadn't money to buy candles. There is positively not one cent in the treasury. Every director has endorsed* [*notes*] *for the Company up to the last dollar he is worth. We have to pass a hat among us to pay for the candles which light us at our meetings.*" It is comical now. It was ghastly then. Sixty-

four miles were in running order.Timber was rotting where it had been laid on the grade. Allen, now president, figured they needed at once seven million dollars to go on. Another assessment of five dollars a share. Over four thousand shares were forfeited for nonpayment, which was bad omen of faith in Erie's future. Citizens again failing to come to the rescue, Allen felt he was powerless and resigned as president, but remained as director and consulting engineer.

Eleazer Lord came back in the saddle as president and dominant mind. I hope he remained serene in his faith. There is no proof that he did not, though the offer of the presidency had been peddled round like an orphan baby of bad antecedents. A new factor had come into play as an influence in New York. Coal was being used for fuel instead of wood, and coal is to this day the great traffic producer to the Erie. How to get that coal from Pennsylvania mines for New York? To its credit let it be set down in the words of one of the lobbyists at Albany: "*not a dollar was spent to influence legislation.*" It was not. The Erie hadn't the dollar. One west-county man complained bitterly he had to pay all his own expenses, and his bills in New York City and Albany cost him "*the enormous sum of $140.*" A later group of Albany lobbyists would have regarded that as hardly pay for cigars. The founder of the Harper Publishing House refused the presidency, and there came in Benjamin Loder, a successful business man of Westchester, who had never asked a dollar loan from a bank in his life. Behind him he had the strongest

men in New York, such new names as the Harpers and the Phelpses and the Dodges. Subscription books were opened for more money in installments of five and twenty-five and thirty till one hundred dollars had been paid for each share. Grocers paid up one hundred thousand dollars in one day. In all, three millions dollars was raised in a month. Contractors agreed to accept payment one-third in stock. The pest of local jealousies along the line nearly drove the directors mad. Pennsylvania would only permit the line to cross the state on payment forever of a bonus of ten thousand dollars a year. Charges on coal should not exceed one and one-half cents a mile, though teaming the same distances cost as many dollars.

But the crossing of the Delaware at Port Jervis was a terribly costly business. The hills were solid walls of rock, the roadbed had to be blasted out. The Delaware was a mill race; but again luck favored the dauntless. George Scranton, at what was then known as Slocum Hollow, believed that with coal and iron on the spot he could manufacture T-rails right there for the Erie; and the Dodges of the Erie backed him with money for the machinery. This cut the cost of rails from eighty-six dollars a ton to forty-six dollars, and the city of Scranton was born from the Erie's first great trials. Farmers of Pennsylvania were less hostile now; for they got the job with four horse-and-mule teams of hauling those rails sixty miles to the tracks. The cash box was empty again, but one hundred fifty miles of the road were now running in

the western counties. The company owed almost fourteen million dollars in bonds, having first, second, third, fourth mortgages piled in a tier one on top of another, paying the awful interest charges of seven per cent on bonds which the promoters " shaved " at from 90 to 70 of their par value. When the Erie finally in 1851 reached the Lakes, it was the longest railroad in the world except one — from St. Petersburg to Moscow; but it hadn't yet got into New York except by boat. If one were philosophically inclined, one would ask here — why had its backers plunged on and on? And I know no answer to that question except — Destiny forcing human tools to greater ends than human vision can grasp, or the more potent human argument — the Lure of the West.

The great event of finally reaching the Lakes was celebrated in a monster excursion partly by boat and partly by rail from the 14th to the 17th of May. Practically every eminent character of the period joined the excursion, to such an extent that shareholders could not be carried. President Fillmore, Daniel Webster, Stephen Douglas, aldermen, mayors, bankers, governors of states, came to witness the triumph. A procession marched through New York City from the Battery up Broadway to the Bowery, then down the Bowery to the City Hall, with bands and bunting and horse squadrons and infantry and police on foot, amid such a din of cannon and tin horns as the city did not again hear until the Civil War. The steamers to carry what the press, which had reviled the Erie

ten years previously, called "our distinguished guests" were "adorned in evergreens, flowers, flags, banners," and the onlookers numbered "50,000 people" — who almost burst their lungs cheering the triumph of a road which they had denounced as "a ruin." Webster rode in a rocking chair placed on a flat car, so he could view the scenery. Banners at every town on the river and along the rails were inscribed "Welcome to the Iron Horse." Part of the run at Port Jervis was made at almost a mile a minute. One of the exuberant banners up in the marsh area perpetrated the pun on President Loder's name —

"*Bring out the Big Gun — Lod-er — the Mountains are Leveled, the Valleys are Filled, the Marsh is Dry.*" Perhaps if some of the visitors had been told how the marsh had been filled, they would not have thought it very *dry*. Engines spic and span in fresh paint on sidings blew their whistles and rang their bells as the excursionists sped west. "*Westward Ho!*" shouted other banners. Poor Webster orated from his flat car to the throngs at each stopping place till his throat failed him. Poems of welcome were read. The wittiest speech of any welcome was ascribed to Alexander Diven of Elmira:

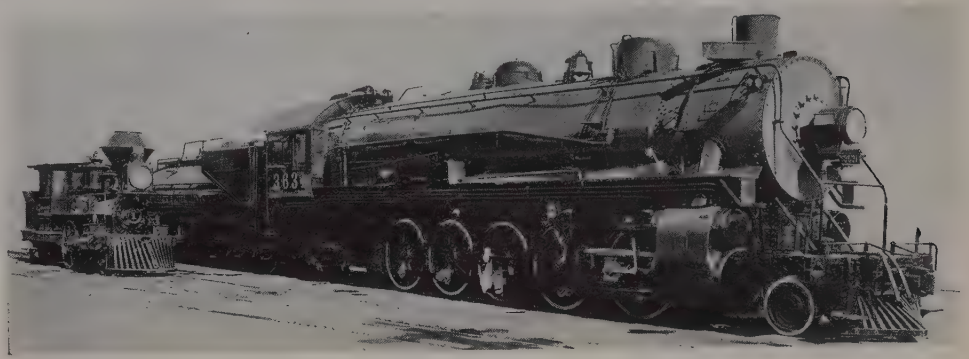
"The cost was estimated at six million dollars. When you discovered it would cost twenty million, you did not shrink even then. But had the public known that it would have cost such a sum, the railroad would not have been built this day, nor perhaps for many years to come. A draft of yours was

never dishonored, even when those animals, the bulls and bears of Wall Street, were alarming the money interests. When there was not a dollar in the treasurer's hands and those gentlemen used to come to him with demure faces that seemed to say all was lost, both your treasurer and president used to greet them with as hearty a laugh as Napoleon gave before victory. This disarmed their suspicions, and when they saw your smiling faces they went into Wall Street and said: 'There is no danger. Our apprehensions were unfounded.' Then the enterprise went on prospering, until now at length it is accomplished, and everything looks bright and cheering. But there is better cheer for you, gentlemen, than mere words. We will show you a table spread with the products of our city market — you city gentlemen. But for you, what would we know of fresh shad and living lobsters? [Roars of laughter.] What is better than all, you have brought us to-day a live President. [Renewed laughter] Who, a little while ago, would have expected such an honor for this village? "

How the honored guests survived the surfeit of banquets is not told; for " great hilarity ruled the night." Wild cheers greeted the first glimpse of Lake Erie at Dunkirk, the western terminus. The menu comprised: " Chowder, a yoke of oxen, barbecued, ten sheep roasted whole, beef à la mode, boiled ham, corned beef, buffalo tongues, bologna sausage, beef tongues (smoked and pickled), one hundred roasted fowls, hot coffee, etc."

" The barbecued oxen excited much curiosity. There were pork and beans in tin vessels holding fifty gallons each. Bread had been baked in loaves ten feet

The world-famous overland stage which played such an important part in opening the West was replaced by the railroad in 1869.



The tiny engine which stands beside this huge locomotive is the C. P. Huntington #1, the first engine to haul a train through to the Pacific.

The first train bound east from California set out on its long transcontinental trip on May 10, 1869. In this old print it is shown meeting a caravan of covered wagons.

long by two in width, and their weight was such that it took the strength of two men to carry them. Ranged along the tables were barrels of cider to wash down the viands."

Poor Webster sat dumb, unable to cram down another mouthful. The President, the governor of the state, Stephen Douglas, a Cayuga Indian chief, Loder, the president of the Erie, all were speakers; but Horatio Allen captured the plaudits of the throng; for he gave an account of his own early exploit running across that trestle long ago when he had opened the throttle and let her go because he was afraid if he ran slow the trestle would collapse. That was only twenty-three years ago, when he was twenty-six years old with the daring of ignorance and youth.

"Aye [finished the Cayugan chief a little sadly]. But fellow citizens, in behalf of my tribe, I come to congratulate you upon the completion of your great work. Your passage through our territory amazed my people; nature seemed to shake as you thundered along, and the gigantic oak and lofty pine bowed in token of your triumph. But the heart of the Cayugan is warm, and he greets you and welcomes you to his country."

Poor President Loder of the Erie, who had forced a bankrupt road through to triumph, resigned at once. He had broken his back with the tireless work and worry. His health was shattered. He had begun life as a country teacher, and died an invalid at Rye twenty years later.

All this is the official side of the building of the Erie; but how dully it reads compared to the work of the men out on the job of the Great Appian Way that was to rival Roman roads. The Chester Meadows, now market gardens, were part of that section where piles had been driven and other poles left to rot when the treasury was empty. When the Erie gangs resumed work, the piles had rotted and the poles mysteriously disappeared in farmers' wood lots. Fine granite blocks left for grading were now found in farm and village houses — how they moved of themselves, the householders could not explain. They had bought them from somebody, who had bought them from somebody.

Few if any strap rails were laid on the Erie, certainly not after 1840; for iron rails imported from England were bought till Scranton began manufacturing American rails along the line. Many of these imported rails were paid in stock, which made serious trouble for the Erie later, when it was bought up at five dollars a share and used in mad market scrambles.

When the roadbed came to Middletown, many farmers gladly donated right of way, and the Erie paid the others current prices; but one old Dutchman demanded double price. The builders went ahead. One morning when the gangs came shunting out on their gravel flat cars, across their right of way stood a four foot rail fence; and on the other side of the fence sprawled a man across the track hugging for dear life crosstie and rails. The engine stopped and the boss ran ahead.

"Can't run through my farm until the Company settles with me," bawled out the stubborn Dutchman.

The engineer tried to scare the old fellow up by running within a foot of him; but in the language of the conductor, "he didn't scare worth a darn." The railroad hands pried him up and threw him in a car and took him down to Middletown; but it was cheaper to pay the old curmudgeon than fight him through the courts; so he was paid.

It had been the custom to pump water at the trackside for the engine boiler. At some places, where the stream was far below, workmen had to pass water up for the engine of the construction train in lines of six hundred pails. Near Middletown was a hill. On top of that hill was a spring with a reservoir to hold river water when the spring failed. The owner of that land was desperate for ready money to stave off a mortgage. He laid a pipe to supply passing engines with water by natural gravity. The Erie paid him two thousand five hundred dollars for the device; and that was the beginning of tanks for the Erie and, so far as I can learn, of tank systems for other rails at the time.

It was amazing how rough rock timberland that could not be sold for three dollars an acre went up to fifty dollars when the Erie wanted to buy it outright for ties. An old Dutchman near Port Jervis feigned such joy at the prospect of a railroad, his answer as to his charges for right of way was: "Vell, rock is not vort mooch! I von't scharge you mooch for dot"; but when the contractors came up to his farm, the

value had soared to one hundred dollars an acre; and they had to pay; for when rocks were blasted out, slides often crashed into the farmhouse below and there were damage suits.

WATERING-PLACE ON THE ERIE RAILWAY.

The first water-tank was made on the Erie by piping a mountain stream into a tank on the hillside. This picture shows a second development of the water tank. A mechanic is seen tapping for "sound wheels" while the engine takes a drink.

At Shin Hollow, near Port Jervis, bonuses were paid the navvy gangs of wild Irish boys to hasten the work; and with farmers supplying the gangs with home-brewed applejack, that ran sixty per cent pure alcohol 1848 was a pretty hilarious winter in Shin

Hollow. "Shure," said an old son of Erin once to me, "we niver wint to the Fair widout a shillala and we didn't think we'd had our fun unless a few of the byes came home wid broken heads." Amid the rail gangs of three thousand were two hundred boys from Cork and about an equal number of what the Irish called "dom Dootch." Whether the contractors' stores overcharged the shanty men, or there had been a bit too much of the "drap of the craythur," one gang of Irishmen had driven out another and then proceeded to run out "the dom Dootch." I don't know whether the Dutch used the wooden heels of their boots or their fists; but they sent their assailants flying. All resumed quiet and the shantymen had come back to their bunks, when the rioters swarmed down, ordered all foes out and when the gangs in bed ignored the summons, chopped down the supports to the shanties, drove out the Cork men and proceeded "to hell wid d' Dootch." By this time, Germans and Dutch were angry men. They had got hold of some buckshot guns and waited till the drunken rioters rushed within a few feet, when they let blaze. Mr. Mott, who tells the story, says the ringleader was filled with small shot "from neck to heels." The local militia was called out and trundled a cannon to the scene of action. The rioters melted like snow in the sun. The joke was — not a man in the militia knew how to load and fire that old cannon. The rioters were arrested and fined; but it was just one example of what the contractors had to handle besides rock and gravel. At Port Jervis were many labor-

ers of this character — rough stuff in the making, desperately difficult to handle, full of resentment to the old European feudal order of things but as ignorant of the fact that liberty is not license as a suddenly unchained pup bulldog that goes out to fight every other dog or shake every cat by the neck till it learns the other dog may have teeth, and the cat claws.

In another riot, an innocent onlooker was stabbed to death by a drunken ruffian. By some political pull, his sentence was light and he was pardoned and taken back on the Erie as a brakeman; but by a strange nemesis, he was run over by the cars of his own train only a few steps from the spot where he had killed an innocent man.

Hardly a soul along the new line had ever heard the night scream and echo of an engine rushing through a canyon. Saturday nights were the great occasions for coon and panther and wildcat hunts. An engine had been sent through one night off schedule time. What was the amazement of the engineer to see break from the brush a rabble of dogs and frontiersmen with guns! The engine gasped. So did the dogs and panting men. They had mistaken the hoot of the whistle for their game and nearly broken their necks rushing down a precipice and across a swamp to shoot the beast. On another occasion, a mob of bushwhackers and their youngsters climbed uninvited all over a standing engine. The engineer didn't exactly like his human cargo. He let off one powerful blast of a whistle followed by a snort of steam and awful chug. They thought "she had bust" and hadn't

stopped running when the train crew recovered from laughter.

A book could be filled with such stories. Said a Binghamton paper of 1848:

"Some who have often seen this spirited *animal* before, and been conveyed by its wonderful speed, are delighted to witness his antic gambols among the hills of Broome. Others who have never ventured beyond the limits of the 'sequestered counties' are amazed at the gigantic power of the steam horse, while he snorts and snuffs to the fresh breeze of our valleys, and vanishes away to the morning fogs of the Susquehanna. The boys throng the track to see which way the *bull*gine is coming."

Or take a few pages from the daybook of President Loder, who completed the line and retired with shattered health.

"I arrived here yesterday (Sunday) morning at three o'clock, having traveled nearly all night, which together with a severe journey on horseback over an almost intolerable road of about 100 miles up the Delaware River, and a bad cold and head ache, confined me to my bed nearly all day. . . .

"I have just arrived at this place after a fatiguing journey on horseback — on foot — on lumber wagon — &c. Yesterday all day on horseback, riding through snow, rain, hail and slush. . . .

"After three days' heavy dragging through deep mud, snow and ice, and cold, rainy atmosphere, we have arrived at this place. We have now seventy-five miles of the same kind of traveling to reach Lake Erie, which will require two more days of hard traveling."

And when he reached Lake Erie, he had to hurry back without rest to fight hostile legislation at Albany. If anyone thinks the building of a great railroad is the dumping of ties and rails along an illegally seized right of way to play with stocks and bonds as a football in Wall Street, this record of the man on the job in the field should convince him that financial speculation is only the side game of the camp followers.

Chapter XVIII

A New Type Of Rail Man Comes To The Erie. 1850–1880

THE best allegory of Erie's record from the late fifties to the late seventies is the place where I sit writing these words. It is in the southern section of the peaceful, beautiful Berkshire Hills on that Harlem Road which ought to have been a section of the Erie but wasn't, and was in consequence grabbed up by Vanderbilt as a part of his vast plans for an all-rail route from New York City to the far North and farther West. Not a great distance away is the early home of Daniel Drew — a tightwad cattle drover — who made his first money by salting cattle and watering the thirsty creatures to bursting point and then selling them on the hoof to the Bowery buyers of New York. From such profits, Drew advanced to become a steamboat man on the Hudson, rivaling Vanderbilt. Then he became moneylender. Then, like Vanderbilt, he foresaw that the steamboat as an inland carrier must give way to steam on rails; but he wasn't a plunger like Vanderbilt. He had saved his pennies too carefully. The evidence was in his clean-shaven hard thin New England jaw, in the crafty pin-point suspicious shifty unrevealing eyes, the cruel tight lips with the droop as of a man who had never laughed joyously as a youth nor smiled once frankly and openly in all his life. It was a tragic face, too. The high forehead was on a brainy head — a good man spoiled, we would say,

but in ignorance capable of fanatic and frantic ruthlessness for good or ill, whichever way the driving power pushed him; capable, too, of slimy, cringing hypocrisy and utter self-delusion.

When I came first to the valley as ignorant of the Erie and the Harlem, as the Erie and the Harlem were of the far West, I moved into an old mansion house that had been the early community home of Lawrence Oliphant and his idealists, who came to wreck like the Erie owing to the rascality of associates. On one side were such great primeval forests as the Erie had cut its way through to the Northwest; on the other side, in a horseshoe, such a beautiful mountain brook as the Erie had to follow and span and tunnel in its path to the Lakes. The scenery had such close resemblance to the canyons of Fraser River in the West, the old place captivated me; but I hadn't dwelt there two years till I became aware that, like the Erie, it had ghosts.

The house was built as Eleazer Lord had laid the roadbed of the Erie, on eternal rocks; but the superstructure was so shoddily put up, though money had been poured in it like water, I soon became aware much of the frame work would have to be removed to blast out the rocks for a heating system adequate to modern conditions; so, like the Erie, I too had to cross the stream and move into a house, which cost me more, but was workable in figures of domestic economy. And that, too, by the same token was not unlike the Erie.

But the resemblance of the old house didn't cease

there. It was much more real. In not exactly a happy mood one day, while supervising changes in rebellious fireplaces, I struck a side panel. It gave — and revealed a hidden alcove. I hit the other side. It twisted on pin hinges and opened another secret panel. This was becoming interesting. Another day, directing the removal of a built-in bookcase and billiard table, I noticed a waxed keyhole in the floor. I traced it. It was in a hidden trapdoor covered by the table and the bookcase. I had the trapdoor pried up — an oblong bored out of the solid rock unconnected with the cellar, damp-proof, weather-proof, empty; but for what? I inquired of aged neighbors and learned that between the moving out of the Oliphant idealists and the moving in of the last owner in whose hands the property had been for two generations, there had been an interregnum, when " Jim Fisk and Tweed and Sweeney and the rest of the Tammany crowd " used to come up for week-ends, in the colloquial vernacular, with " carloads of booze and opera girls and boodle, to divide the swag " before the famous Lexow Committee scattered the infamous political ring; but of living people, only one was old enough to recall the Jim Fisk and Tweed days, when the Erie iniquities were in their full poisonous bloom; and he was an octogenarian in a mountain cabin, whose ancient white mule had such a nocturnal habit of coming down and rolling in my kitchen garden that it gave me a good excuse to go up the mountain and see what I could dig from this old bed-ridden Father Christmas mountaineer. When

I add that he later sold his property to a modern power company and carried the substantial uncashed check for months, you get an idea of how far modern life had touched his primitive ideas.

Fortunately, in the somewhat ridiculous interview, I had a modern writer of Drew's life with me. While he recalled this and that of the old Fisk-Tweed days, the coaching and sleigh parties, of which some of the old conveyances were rotting in the attic of the ample stable, I soon found the old fellow was reluctant to open up to a woman on " the carloads of booze and ladies." He didn't consider those subjects proper for discussion with a woman; so I deliberately turned away to his housekeeper and presently heard in that stage-whisper of the deaf, which can be heard over a normal person's shout — " and there was champagne, yes, sir, champagne — and " — with an awful look in my direction — " g-ur-ls! "

Poor Fisk! The second actor running true to form in the tragedy of the Erie!

I then went digging after Fisk's antecedents as I had after Daniel Drew's. Born a poor boy amid the hills of Vermont, Fisk had been placed with a neighbor, where he could go to school. The three R's and the birch were the leading subjects on the school curriculum; and the last had been plied so vigorously on little Fisk that he ran away, age ten, unable either to read or write. When Drew came in the rail world in 1854, he was fifty-seven; so he was, far as we can guess, at least old enough to be Fisk's father, when he proved as evil a mentor in ways that were crooked

as Bret Harte's Chinaman. How Fisk passed the next ten years is an unknown page of his life — probably hungry often and sleeping in circus tents; for he was always more or less the circus showman. He was known to have traveled through all Western New York as a circus boy, ticket seller, " sub " or " supe," as the country ring could use him; but he turned up radiant and resplendent in 1858, with a caravan of peddlers' wagons drawn by twenty spanking horses, selling silks and grocery wares through sharp-witted country lads in his caravan, to local country merchants. He was known as " a lady killer " then and loved to flash into the country hamlets with his red vans and galloping four-in-hands, the queen of the countryside seated on the box, conspicuous as he could make himself and his partner; and the scandal and the repartee and the good-natured bullet-proof wit of the young salesman were as effective advertising in the country towns as the same tactics proved later on Broadway.

" Lie about a shilling, fellows? " Fisk used to banter. " Pooh! I might tell eight lies about my goods for a dollar; but for a shilling! " Prior to the Civil War, Fisk was a junior partner in a drygoods firm in Boston, from which he seems to have sold out and come to Wall Street, and found himself promptly frisked out of his life savings of some fifty thousand dollars. Mr. Mott, the official historian of the Erie, says Jim Fisk took this ill adventure of his first big plunge in the financial maelstrom as he took everything — with bluff good-nature but none the less

sinister vow: "Wall Street ruined me. Wall Street shall pay for it!" Wall Street did — paid through its nose in such fashion that its reputation has not recovered to this day. How he fell in with Drew, the religious fanatic and financial screw, is unknown, but it is supposed Drew needed him to sell under cover of a brokerage firm his steamship lines so he could go over to steam on rails. The Erie, with its huge freight revenues but always empty treasury, seemed to offer the biggest prize to a man with real cold hard cash to lend and no conscience to restrain him. Anyway, Fisk was backed by Drew in the brokerage firm of Fisk and Belden. When the Erie was in the deepest gutter of its cesspool slime, Fisk was asked how it might end. His nonchalant reply was: "Can't just tell — Marble Halls of New York, stone walls of Sing Sing." As the world knows, it was neither. It was the assassin bullet of a younger man jealous over "a wanton's smiles," but circus host and showman Fisk was to the end, and when asked if he had any hope of recovery, he mumbled that he "hoped so"; and died without a moan or murmur of complaint at Fate. Take a look at the face of the man! He might be a circus whip, a ward boss, a race-track sport. Elaborate in his loud costumes and louder diamonds and glitteringly harnessed horses and dog-carts radiant as in his circus days, he was the hero of the mob and the angel of the chorus girls, for whom he set up luxurious residence next to his equally luxurious quarters for the Erie. The Grand Opera House and the old Fifth Avenue Theatre were his

pet side shows. He was devoted son to aged father and mother, devoted husband to loyal wife — yet left all penniless. In contrast to his showman life, he lived in two obscure second-story rooms almost as penurious as Daniel Drew. The real Fisk behind the doors of those two obscure rooms, no living soul ever knew. He had the reputation of a good sport. Yet when he couldn't win fair and square, he stopped at nothing from bribing judges, who were his creatures, to hiring Bowery Tommies to beat up foes — sheriffs or men who voted wrong — with gangs of city toughs. In figure, he was remarkably handsome after the fashion of the big bluff blond, fat of jowl and body and conscience, if it had not perished early of fatty degeneration. It is interesting to read the roster of the men who were his pallbearers, while traffic paused draped in black — they were the colonels of all the aristocratic crack regiments in the city. On the coroner's jury were the leading citizens — the Clews', the Blisses, the Lincolns, the Hoyts. He seems to have been one of those extraordinary human magnets made up of two extreme poles — good and bad — the most hopeless of all characters to be classified; for just when you have them classified as among the black goats, they hop across the line to the white sheep; and just when you have them classified as good fellows, they are back among the black goats.

For the great tragedy of the Erie, the characters are now all set but one, Jay Gould. Without Jay Gould, the stage would be *Hamlet* with the Prince of Denmark left out; and he was the most enigmatical

of all. His enemies called him "a pasty-faced little weasel." His friends designated him "the financial genius of the greatest rail age the United States ever knew." Which was he? And I answer reverently, only the Angel of the Eternal Assize knows. He never joined the wild frolics of the gay throngs, who brought up "the cars of booze and girls and swag" to shock the countryfolk in a quiet hamlet. Such buffoons were his obedient tools — but tools who had to obey his nod or divine his designs and carry them out without word written or spoken of his aim. He was as clean of vice in his private life as polished silver. He cared nothing for money, only for power. He cared nothing for the prize, but only for the game, and seemed to juggle a dozen games from one brain with one hand. No one will ever know the extent of his private benefactions and no one can ever estimate the number of innocent people ruined in his manipulations of the vast properties that fell in his hands. Examine his character by any measuring rod you care to use — moral, economic, financial, psychological — and it isn't easy, for he was secretive and mercurial in his lightning moves. There are only two essential weaknesses in Jay Gould's character. First, he was somehow or other, willing or unwilling, destructive. That seemed to have resulted as much from the shortened vision of his own times as from his own nature. He did not seem to apprehend, even dimly, that there is as moral a law, as unbreakable an unwritten law under finance as under conduct. You can no more break that law than you can break

the law that two and two make four, or that fire burns. You may think you can break the law, but it breaks you. A man can only steal when other men don't steal. When all men steal, he is gone — gone back to the beast of prey. A man can only murder when other men don't first murder him. When all men murder, he is killed by his own code and should not whine. That is too much like trying to be a beast of prey and a man at the same time. It doesn't work in the scheme of progress. The lawbreaker sooner or later, in public or private, goes down under the wheels of the destructive machine he has set going; and I do not know an exception to that from the hangman's rope to suicide. Vanderbilt might have had, and did have, fifty flaws in his personal character to Gould's one; but he was a builder, a constructor always. Gould, somehow or other, was not.

Gould's other weakness was so small and so picayune it is almost laughable. Amenable to flattery — never! He hadn't enough personal vanity in his make-up; but he had a readiness, a deference, to take titled scoundrels, outcasts from their own class in Europe, in his business confidences and his social circle for which they were unworthy as the mud on his door-mat. An example of this will presently be given.

He was born in Delaware County, in 1836, from which my own ancestors came; and there are legends of his school life among their descendants to this day. By some, he was liked keenly, though distantly. By others, he was disliked intensely, but that, as far as I can gather, arose from the fact he was a fragile

studious boy given more to books and his own shy ambitions than to the rough and tumble scrambles of a pretty rough and tumble period. Jay Gould beat all boys of his own age and much older in his studies and in spite of his fragile physique, between his twelfth and his sixtenth year, trudged weekly from ten to twelve miles on foot — when he could not get a chance to ride — to attend the Academy, or what we would call High School. The Academy was for "gentle women" and "gentle men" and had not teachers but preceptors and preceptresses. I hope you see the distinction had a wide difference. Here the village ruffian had to drop out, or modulate his loud gruff bully half-man adolescent pup-dog voice to a self-controlled suave voice, for which Jay Gould was always known even in his most vicious fights with the bulls and bears of Wall Street. If the youthful pupil were still a wolf beneath the veneer of good manners, he had to mask the wolf well or he would be given a gentle hint that the Academy would be too crowded to receive him next year. He had to graduate right up to high line in his studies; but he had also to graduate right up to a fine, invisible line in his manners — or go! And that indelible stamp you will find on the descendants of those graduates from Roxbury and Delhi to this day.

Jay Gould began life with two inestimable advantages. He came of the very best old Colonial stock and he married into the same stock. That possibly explains his unkillable pluck, though handicapped from the first by a small, fragile body. What he lacked

in brawn, he made up in brain. He trudged over the fields that long distance to the Academy because he loved his clean shining little stone farm home for week-ends; but to pay tuition fees, he had to keep books for a blacksmith at the princely figure of sixteen dollars a month. At night, by candlelight, he studied surveying and history, for which he had a mania. If Gould had not become a financier, he would have become either a great civil engineer or a great historian; for he made six hundred dollars mapping Albany County before he was eighteen, and wrote a history of Delaware County before he was twenty. When he had exhausted the knowledge of his dignified Academy preceptors, he took the first job he could get — clerk in a store at twenty dollars a month. What with map-making, surveying, clerking, keeping books, he had five thousand dollars saved when he was twenty-one. He built a plank road by contract and next jumped into country banking from which he sold out and came to New York, where he took the fearful risk of buying up the bonds of a lame little Saratoga rail at ten cents on the dollar, and after putting it on its feet, found himself in Wall Street.

If you are inclined to be a fatalist, believing individual endeavor to be a part of a greater design, ten times more will you be a fatalist if you go back over the dates of Jay Gould's life. He was born in May, 1836, less than one year of the time that first spadeful of earth was lifted at Deposit for the Erie, in November of 1835. As you know, the true astrologic

year begins in spring; so Gould was born with the kind stars in the ascendant, and the Erie was born with very sinister stars indeed in the ascendant and all the kindly influences of a genial sun on the decline. He had jumped into surveying and map-making for rails and plank roads, the very year the Erie had celebrated its triumphal entry to the port on the Lakes. The resounding huzzas of that 1851 May procession must have reached young Gould's burning and ambitious ears; for he was surveying right along the state boundaries between New York and Pennsylvania. He must have seen at a vast distance the celebrities of the famous excursion; for many of his maps and plank road contracts were made for and at Albany; and Jay Gould was never at any time a fool. Ears and eyes were open, but lips shut. He must have known from his upstate experiences that, while the revenues and freights of the loudly lauded Erie were now mounting every year, the mortgages on the line were piled sky high — firsts, seconds, thirds; but there is no proof that he knew the one essential thing about those mortgages at this time. If he had, he would have twisted the necks of his subsequent associates — Drew, the money-lender, and Fisk and his gang of bribing bosses, who owned judges and legislators and voters in droves. He would have twisted their necks and refused to be drawn into their dark cesspool of ruin. The one essential thing in those mortgages — the secret, ruinous, criminal thing was they had been issued so that at any time at the sole discretion of the treasurer, without a director being

liable or aware of the action, they could by the simple trick of tearing up the mortgage by the man who held it, be converted into stock; and the stock could be flung on the market, driving its price down to zero; and when a rail's stock falls to zero, its bonds begin to follow the downward curve of the stock; and the money-lender can buy up that stock driven from par of 100 to 7, 8, 10, hold it off the market till it rises again, sell again, again buy bonds and repeat the trick, adding to his gains while he ruins his road. This explains why Drew, the cattle drover, had "gone into Erie," and snaked and sneaked and coiled and inched his way into the commanding position of treasurer.

And now Jay Gould had jumped into New York rails in Wall Street, when the Street was ringing with the ominous question of how a road with mounting revenues could have deficits mounting faster than its revenues. He might have answered sententiously as a later-day oil man of California answered — that a little more such prosperity would bankrupt them. The freights were coming faster to the Erie than they could raise money to handle them; so the Erie borrowed and borrowed and borrowed — borrowed when real money was so scarce after the Crimean War, it had to pay seven per cent on one hundred dollar bonds for whose sale the railroad could raise only seventy-five dollars. It had to do that or see its engines collapse from too heavy loads, or its bridges crash from too long trains on rotting iron rails, or frightful accidents that meant rebuilding and suits for damages.

Remember, its roadbed was the most expensive at that time in the rail world. Its grades were terrific — the highest known at the time. Its curves were sharp. It could not refuse freight without losing its charter. It could not accept it without outlay to handle it; and it could not make that outlay without paying a rate of interest that was a millstone round the neck of any struggling venture; and in that era, Jay Gould, age twenty-five, jumped in the rail world of Wall Street.

Let us see what had happened after " the tumult and the shouting had died " on the triumphal excursion to the Lakes.

The stage and the characters are all set for the Tragedy of the Erie.

Chapter XIX

Enter Jay Gould And Cornelius Vanderbilt. 1858–1873

WHEN Gould came into the big rail world, utterly unknown, he was between his twenty-fourth and twenty-sixth years. When Vanderbilt came as a power in the same arena, he was well on in his sixties and one of the richest men in America. Legend has it that his sudden conversion to rails at an age when other men usually seek repose resulted from a chance ride on a railroad, when in spite of a minor accident entailing delay, steam on steel went racing past his river steamer at a pace that opened his eyes to the future of rails. It is also true that he became involved in rails because in the slump of prosperity after the Crimean War, many crippled, poorly built rails with interest on debts they could not pay came to him as a rich man with ready cash to endorse their otherwise quite worthless promissory notes. Also his son William — to Vanderbilt's amazement — had made a dinky little suburban road on Staten Island pay. This was the son to whom legend has ascribed the classic phrase, " the public be damned " ; and, it may be added, there is no authority for that legend. The old Commodore might explode in anger almost to apoplexy. The son was of another stripe — sharp as his father but reticent as a clam.

Vanderbilt had endorsed bad paper on the Erie's chattel mortgage stock for more than four hundred thousand dollars; but Drew had endorsed up to nine

hundred and eighty thousand and held in addition bonds between three and four millions, which he could at any time either change into stock or foreclose as a mortgage is foreclosed on a farm — and toss the whole road into bankruptcy.

Two questions should occur here.

When the Erie had reached the Lakes in such a blaze of triumph, how came it that its bonds had swollen to thirty-four millions with stock of only ten millions? That was as dangerous a proposition as to mortgage a thousand-dollar house for thirty-four hundred. The thing seemed inexplicable. Here was the Erie, with huge immigration traffic west and huge coal traffic east, going back financially every year. How came it the Erie was at one and the same time making money and losing it? Solely from those early blunders. The gauge had been made six feet. It had to be changed to the standard gauge. Though that was at first done by laying a third rail, it meant changes in one hundred and thirty-two engines and sixteen hundred cars. Iron rails, too, were being replaced by steel. The charter did not permit crossing New Jersey; so expensive docks had to be bought to connect with New York. Telegraph and machine shops and rail stations and water tanks added to the outlay on a railroad that had really begun on capital far below its costs. Side roads had to be built to feed the main line; and when these crossed a New Jersey or Pennsylvania boundary, they had to be under separate charter. The fact that Daniel Drew, the treasurer of the Erie, held some of these properties and sold them

to his own line under cover did not make them a particularly cheap investment; and the sly old scamp took mighty good care that properties so bought for the Erie had bonds that could be converted into Erie stock. At this very time, too, the Erie suffered heavily from floods, from strikes, from hard winters that hampered traffic.

The second question is — how did an ignorant old man like Drew, a cattle drover, a drivelling, tobacco-chewing, evil-faced country skinflint — ever get such bulldog grip, such sinister, unbreakable power on a road financed and sponsored by the best minds of his generation? How do rats in a great ship gnaw holes that may engulf it? The question is already answered. Drew held the mortgages. At times he held three and a half millions of bonds, at times almost six millions; and certainly at one time when Erie shares were down to 17, he held, in addition to these mortgages, bonds as double security, twenty-eight thousand shares in one block and fifty-eight thousand shares in another. If the directors did not keep him as treasurer, he could ruin the road. If they kept him, though they could not prove it, " the Street " was aware something sinister was the matter with the jumpy Erie shares. How many shares of Erie were out on the market anyway? Nobody knew. All the public knew was when Erie went from 80 to 43, and from 43 down to 17 and 8, and everyone was flinging it wildly to the dogs, an unseen hand was buying up the cheap shares, and woe betide the speculator who couldn't deliver what he had sold at the low price. The price would run up

mysteriously to 80 again, and the speculator had to deliver or go to ruin. He often did both. Drew, of course, was the explanation. By changing bonds to stock, he could flood the market beyond its buying power. When the price went down, he was the buyer. When the price swung up from scarcity of stock, Erie soared; and the speculative public followed as stampeding sheep follow a bellwether over a precipice; and Drew was at the bottom of the precipice to shear them well. He sheared friends and foes alike. He would "tip off" church friends that Erie was "a good buy"; and when each friend "tipped off" circle after circle of other friends, Daniel Drew was on hand to let them have all the shares they wanted.

Drew and Vanderbilt did not love each other. Both had begun as what we would call "roughnecks"; but while Drew's faults became more glaring and shameless with age, Vanderbilt was no longer a crude ferryman. He had gone to Europe in the fifties on a yacht that was the wonder of the world. "Upstart," they had called him at first and refused to receive him in high circles; but when he left Europe, half the royal courts of the Old World had groveled at his feet and all society was feeding out of his hand. He had learned more on that trip than he perhaps acknowledged. He had learned diplomacy. No longer did he send back such a terrific ultimatum as he had once delivered to a rival steamship line: "You have undertaken to cheat me. I will not sue you because the law takes too long. I will ruin you." And he did. He had learned that you can't fight a skunk

LET THEM HAVE IT ALL, AND BE DONE WITH IT!

The period dominated by Vanderbilt, Jay Gould, Russell Sage and their fellow speculators was notorious for stock speculating and financial gambling.

Jay Gould, along with other members of the notorious Tweed Ring, was frequently a victim of the famous cartoonist, Nast.

in the open and not come out damaged. He must also have realized that American carriers, which were independent, could not stand up against European water carriers heavily subsidized by their governments.

Vanderbilt and Drew had been rivals in the Hudson River steamship business. They had slashed rates; and again legend has it — Drew had come out best and taken a good slice out of Vanderbilt's millions; and now Vanderbilt came into rails. He had added vastly to his fortune from steamships in the wild stampede to California; but he was quick to see that a gold camp is only transient as an earner. It either attracts rival roads, or if short-lived, peters out; but a railroad through densely settled territory is an earner for all time. He had begun to buy Harlem when its stock had sunk to $9 and bought it all the way up to $100, to which it ascended in less than four years under his careful management of scrapping poor engines, which the crew called " tea pots," " tin kettles," selling the old slat-seated cars to new lines in the West, and putting on cars that could carry as many as eighty passengers, and inducing the City Council of New York to extend his right of way through the heart of the city, which in the sixties was still very largely suburbs and truck farms. Undoubtedly he used Boss Tweed as his tramway tool with the City Council; but before these tricky rascals could rescind the permission in order to pound his Harlem stock down, he took good care to have his workmen on the streets day and night getting the tracks down; so

when the motion came up before the finance committees, there lay the rails; and when Drew allied himself with the Tammany gang and tried to force Harlem down by selling what one historian calls " imaginary shares," Vanderbilt's orders were to buy every share offered at any price. Before the Tammany gang realized, Harlem shares were at 179, and Vanderbilt demanded delivery of the " imaginary shares." No one knows what he took out of Drew's tight pockets by this bold stroke, but certainly enough to make up all Drew had cost him in the old steamship days.

Many legends cluster round this first clash of the two masters of finance in Wall Street, one the ruthless, despotic builder; the other the rat gnawing ruin for others in the dark; but all agree Vanderbilt was unmoved by the whining tears for mercy and bade the Drew gang " pay up and shut up." Then it dawned on the Street, that Vanderbilt was in rails, not to smash them and speculate, but to build them up in great permanent systems.

Parallel to the Hudson and the Harlem, another road — the New York and Hudson — had crept in decrepit joints to Albany and was now, like other roads after the Crimean War, crippled by finance. Vanderbilt began buying it at 25. What could he do with it? men asked. Vanderbilt's next step was to go to Albany and obtain authority in the charters to consolidate his rail holdings for a vast system to carry immigrants, now arriving in America by the thousands, to the roads west of the Lakes. Bribery as a

fine art had not yet been perfected in Albany, but with Boss Tweed's help he got the authority; and his Hudson stock went to 150. Again poor old Drew tried to pound Hudson down, and again Vanderbilt bought every share offered right down to 90. Again many legends cling to this episode — Vanderbilt standing at his office windows signaling and shouting for his brokers and swift messengers — there were no telephones in those days — " to buy every blank, blank, blank share offered " right up to 285. Again Drew wept and cringed and pleaded and dogged the Commodore to his residence in Washington Square. " Pay up or shut up " was Vanderbilt's pitiless reply. Drew lost another million to Vanderbilt.

It may be guessed these two loved each other less.

If vengeance could move a heart whose only god was gain, the poisonous fury of a rattlesnake ready to strike must have mingled with Uncle Daniel Drew's chewing tobacco the night after that interview. He had the Erie tied up so he could loot it whether stocks went up or down; but this — Vanderbilt! What would he not dare? Let him dare. Drew would trip him there. I refrain from all the details of this fight to connect his Harlem line and his Hudson River line with that Albany to Buffalo line. The records fill volumes. Freight had to be broken and transferred in another of the famous " isthmus wars " at Albany. Passengers had to trudge across the bridged river to the Albany station. For three years, the battle waged hot — the Commodore knowing well that public conven-

ience was on his side to force the politicians to change his charters. His stock winnings of at least four millions gave him leeway to improve all his roads. He was not raising rates. He was lowering them, so fast he ruined rivals. When his consolidation went through in 1869, the stock of his combined roads was selling at the straight market value of two hundred dollars for a one hundred dollar share. Vanderbilt was at that time seventy-five years old.

He did, then, that for which he has been blamed and condemned ever since. He looked at the market value of two hundred dollars. He looked at the par value of one hundred dollars. The roads had cost forty-four millions cash. They were valued at twice that on the Street, and they were worth it. He had double-tracked the Hudson River line. He was four-tracking the road from Albany to Buffalo, two for passenger, two for freight. He had ripped up old iron rails and replaced with steel. He had replaced wooden bridges with steel. He had the Grand Central Terminal — the most valuable terminal in the world. By the stroke of his pen and the fiat of his own will, he now increased his rails' capital to eighty-six millions. Was the forty-two millions added to the capital " absolute water," as Charles Francis Adams, one of the best authorities on rails, charged? Or had the stockholders who had built up the roads the right to increase their value to the Street value and pay themselves back the profits they had yearly put into the line instead of into their own pockets? I answer frankly — I do not know. They could have made as

much and profited just as much by selling their one hundred dollar shares at two hundred; but that would have dispersed the New York Central stocks among a horde of speculators to become the football of such swindlers as Drew; and that Vanderbilt would never permit as long as he was a power in the rail world.

Wooden rails had been replaced by iron rails. Iron rails had been replaced by steel. Roadbeds and bridges had been made as safe as the engineering skill of the day knew how to make them. Cars had been built comfortable as home parlors. Transfers from point to point had been linked up in one continuous system. " Isthmus wars " had been terminated for all time. Telegraph had been installed. Stations had become more comfortable waiting places for the immigrants passing west than they or their ancestors had known in all their lives. Freight sheds of frame had been changed to brick and stone to avert fire. Lateral feeders ran out from all central points to bring traffic down to the main line.

Did that justify Vanderbilt in almost doubling the capital stock of his lines? I answer frankly — I do not know. I know a grocery man does it rather than reduce prices to his customers. I know a man who has a hundred-dollar horse does it, if some other man values the horse at two hundred dollars, though it is the very same horse. I know farmers have done it with a cow that cost fifty dollars, selling in public auction for one hundred and fifty.

Those who wish to follow out this time-worn con-

troversy can balance arguments and facts for themselves. One of the authorities who goes deepest into this and cannot be accused of bias is the late William Washington. He asks bluntly, when the rail has added value to the property of all residents along its line, why shouldn't it add to its own property value? Aye — retort the other side — but the public has to pay higher rates to keep up dividends on the higher capital. *But that is exactly what the public did not do.* Vanderbilt had slashed rates down from the time he took hold of the New York Central group. He had slashed them down where he almost wrecked the rival Erie. He had given better service at lower costs and he had risked his entire personal fortune in the process of upbuilding. That rails are not " overwatered " to-day we know from the fact that the official valuation made by the Interstate Commerce Commission is pretty nearly twice what the Radicals of 1913–14 thought it would be — certainly twenty-five per cent higher than the rails would have claimed for themselves at that time. What rail wants to overvalue itself and get taxed for that value? Jefferson paid fifteen millions for Louisiana. Would anyone contend that Louisiana is only worth to-day the capital Jefferson put into it? The question makes one laugh. But, says the other side, much rail stock had been given shareholders for which they had not paid a dollar. True, says Washington; but the farm homestead fee costs ten dollars. Has the farmer no right to the values he puts in year after year, the house for " the sod shack," the barns for his cattle, the fences, the im-

provements year after year plowed in while he foregoes using each year's profits for himself? Before 1900, three billions had been lost in bankrupt rails. Have investors who take such risks no rights to profits from the risks?

Another curious fact Washington brings out is this: *if dividends on "watered stock" increase rates, then the rails on which no dividends have been paid or ever can be paid should have the lowest rates in the country. The very opposite is the case. The nonprofit rails are allowed by the Interstate Commerce Commission the highest rates in the land.* It is that or let them smash and quit to the ruin of the shippers along the lines. Washington takes every rail group in the land, Northeast, Southeast, Middle West, Northwest, Southwest, and giving the actual costs and actual earnings, proves this. The whole dispute is so much deeper than a snap judgment can decide, that it really harks back to the question, Are profits permissible at all? In other words, are we to base our regulations on socialism or private ownership? There is no use "ducking heads" from that brutal final question. It is the question; and I am not wise enough to answer it. We have to work it out, not smash it out. Two things we can set down as a dead certainty. The American voter is not going to be stampeded rashly to any extremes from one social system or another. Neither is he — and on this you can wager your last dime — going to see the American farmer reduced to the status of European peasantry by overcharges or overtaxes eating up all his profits. The American

nation will strike a fair balance as it has done from the beginning of its history.

All we can answer in either justification or condemnation of Vanderbilt's action, is this — if all the roads that followed his example in " watering stock " had put into their systems as great improvements as Vanderbilt, and put in of " water " only the selling value of the stock on the open market, " watered stock " would not have become the frightfully malodorous thing that stinks in the nostrils of decent men. It would not have " rooked " thousands and tens of thousands of innocent investors, who bought the swindles, while the gamblers retreated with the cash of a worthless thing sold — retreated with the unction of a Drew and tongues slyly tucked in porcine jowls.

And that is as far as any purely historical record can go without becoming involved in a furious, futile controversy that wages between two schools to this day; and don't mistake it — both sides are absolutely sincere in their views. Their views do not arise from the jaundiced envy of the slug, who will do nothing himself but considers he has a right to a living, without effort or self-sacrifice, from the man who has accumulated through thrift and foresight and daring. One side sincerely contends that such a burden of doubled stock imposed on the public for all time higher rates than were necessary for fair profit. The other side as sincerely contends that we have no more right to limit the profits through increased values to rail stock than we have to limit the

profits through increased profits to grocery stock, or cattle, or horses, or sheep; and not being a Solomon, as each side contends it is, I suppose, like England and the United States on other experiments in democracy, we shall muddle through and learn by experience. At present, by the law of 1920, rail profits from traffic revenues are limited to five and three-quarters per cent. We shall not have to wait long to decide. Twenty-five years will tell the story; for in no period in all history have we witnessed such colossal mergers in all kinds of stocks from breads and coppers and banks and radios to silks and chain groceries and mail order houses, which began with a peddler's capital of ten cents and are now in an era of capital not at Vanderbilt's eighty-six millions, but at billions. Let us try to keep our heads and hold the vitriol from our pen points till we learn. It is going to be one of the great lessons of the next quarter century.

But now Vanderbilt did exactly what Eleazer Lord did back in the thirties. He looked at the rail map. His system covered one straight leg of a triangle south to north, then at right angles, another leg of the triangle east to west. Obviously, though Vanderbilt knew nothing about geometry, a problem over which most of us tripped in our schooldays would have told anyone the base of that triangle would complete his system cheaper, quicker, straighter, without this slashing of rates between Erie and New York Central from nine dollars to five, and in some cases with secret discounts for big shippers to four. There was no sense in that. What is more — there was sense-

less loss; and Vanderbilt hated loss and he hated senseless, stupid blunders. His first step was always to make a rail pay on its merits; and this slashing of rates below cost of service, this paying of big shippers secret discounts (rebates), this system of employing "runners," or agents, to go out and get freight from rivals at any cost — wasn't sense. It was crazy folly, that killed the little shipper, who didn't get discounts; and Vanderbilt knew the prosperity of his lines depended on the prosperity of the shippers along the lines. Ruin them and the traffic would decrease.

So Vanderbilt cast his wise old eyes on the Erie; and the tragedy crashed from the blue in a storm that rocked and wrecked the rail world for more than twenty years. He was a holder of some of its bad papers and he rightly guessed whence the floods of worthless stock were emanating — from Drew. His first measure was to dam those floods; and I doubt not he did it in pretty vigorous language. Erie's bonds were down to thirty-five dollars and when Drew advanced more loans on more bonds, he handed over only sixty dollars for hundred-dollar bonds and took the difference in stock, more stock. All this did not happen in one year. It ran on from 1857 to 1869. The Erie, which was to cost only ten millions, had now cost in actual outlay thirty-seven millions.

When the bonds were at 35, the stock was at 8; and Drew continued to suck it down alive. He was eating it up at that price; for Erie had to borrow from the old curmudgeon. It couldn't pay its wages.

It couldn't pay its taxes. It couldn't pay interest on its debts. It did not seem that any power on earth could pry it loose from Drew's coils. Directors tried to pry it loose by forcing it into a receivership. Who bought it? A representative of the bondholders — for two hundred and twenty thousand dollars in 1861 — which meant Drew; but Vanderbilt and Vanderbilt's friends were on the new board of directors; and one would give a good deal for a snapshot of those two old enemies with masked faces looking at each other across the big table — Vanderbilt now showing the signs of age with side-burn whiskers and high forehead topped by a fluff of whitening hair but as brainy, as dominant and determined as in his ferry days; Drew stooped, leaning on a cane, suave, self-righteous to the point of being bullet-proof, sniveling, but shifty of eye as ever. There was only one way to guess what Drew would do. He would pretty nearly always do the very opposite of what he was pretending to do. Whereas with Vanderbilt, he would do what he set out to do, or smash what tried to stop him, or smash himself trying to smash obstructions. One was a fighter in the open, the other was an assassin who struck in the dark; and it seems ridiculous to add, the banks of New York shrank in sheer terror before the power of these two battling men. Drew realized he needed younger men; so he was using Fisk, the showman, and Gould, the silent young free lance, just as Vanderbilt had not scrupled to use Tweed. Both Gould and Fisk were new names to the Street as late as 1867; but because Tweed and Fisk played the same

game with Tammany Hall to elect judges pliant to their chiefs' will, the Street had an erroneous idea that Vanderbilt and Drew were playing a game in collusion to shear the public in frenzied speculation. The Street guessed wrong. It was rather that each like a wrestler was playing the foolish Street to catch the other unawares and crush him.

It seems outrageous, incomprehensible, unbelievable, that a great rail system, on which two or three million shippers were dependent, in which thousands of innocent people had invested their hard-earned savings, could become the prey in a disgraceful prize ring of rascality. It seems to point to the inference that all rails should be taken out of private ownership and placed under national management. But wait a bit! The darkest shadow overhanging Erie's fate was that the railroad had got into politics and politics had got into the railroad. Public rights were ignored as the bleating of fool sheep. Votes were bought in mobs. Legislators offered themselves on the auction block to the highest bidder. Judges obeyed orders from the rail fighters as from the nod of a god's head and in reward got fees running from fifty thousand dollars for a decision to one hundred and fifty thousand for a referee's action; and sheriffs were beaten up by Bowery toughs and thugs who were never so much as arrested. That the judges were later impeached and the legislators relegated to the disgrace of defeat and infamy — did not restore the losses to the ruined.

Ugly pages in the history of democracy and it

doesn't commend rails in politics, or politics in rails. It harks back to the earliest experiences of New York and Massachusetts that the farther those two are separated, the better for each.

Records before the courts and state investigations cover literally thousands of pages. One need relate only one or two of the high spots to grasp the iniquities now working under cover to use the Erie as the speculative football of thugs, gamblers, bribe givers and bribe takers.

Vanderbilt's first move was to go openly to the courts to stop Drew from issuing stocks for bonds as fast as the printing presses could grind out shares. He asked an injunction stopping the directors from paying interest or principal on the bonds held by Drew till he would restore the bonds and shares held as additional security. Judge Barnard, who came under black enough cloud himself, granted the petition. Vanderbilt then demanded the withdrawal of Drew as treasurer. Here, Judge Barnard delayed his decision. Did he delay for a bribe? The question cannot be answered. He was later impeached and stock profits or fees totaling fifty thousand dollars were finally traced to his doorstep. Vanderbilt went on fearlessly buying Erie stock; and Drew gave him all he wanted at mounting and soaring prices. But while Vanderbilt was appealing to a New York City court, Drew hopped across the Brooklyn ferry and asked another injunction from another judge to restrain Judge Barnard and Vanderbilt from using the courts to speculate in Erie stocks. The Brooklyn judge granted

the petition. The Erie directors were permitted by the court of Brooklyn to go on turning bonds into stocks.

Here were two courts in one state giving absolutely contradictory decisions.

In twenty-four hours, Drew and his crowd issued ten millions more of stock and hurled them on the market in defiant triumph. The stock fell fifteen points in one thud.

Was Vanderbilt stopped from buying Erie? He was not. He flung his whole fortune into the fight, and the press kept quiet, and the banks trembled. Later, the Brooklyn judge cleared himself by acknowledging frankly he had given his decision to Drew on insufficient evidence and was unaware it was to be used for stock-jobbing purposes. In the interval — and it was only twenty-four hours — " at ten on the morning of the 11th, a panic stricken Drew, Gould and Fisk bearing in their hands account books, desk drawers, packages of paper, bonds, assets, archives, bales of greenbacks in hackney coaches . . . fled to Jersey City . . . followed by others like themselves in the night to place the Hudson between themselves and " Judge Barnard. If Drew's judge was going back on him, Drew was going to be safe across the river in Jersey; and the printing press went on grinding out more shares for Vanderbilt to buy.

It would be comic opera if it were not a hideous travesty of all that democracy represents.

Vanderbilt demanded that a receiver be appointed for all the Erie.

The receiver named was Vanderbilt's son-in-law. A judge from yet another court on petition of Drew's lawyers forbade Mr. Vanderbilt's son-in-law from becoming a receiver; but in any case, what was he to receive? All the Erie papers were over in New Jersey beyond reach of New York court officers and both sides were now ignoring injunctions and Daniel's printing presses were busy as ever grinding out Erie stock.

A Tammany party heeler was appointed to referee what decisions were to stand; and while he never refereed anything, he was paid for his services — and, of course, that came out of the poor Erie's treasury; for the treasurer was Mr. Drew.

The thing was now becoming such a public scandal that the judges found themselves in the witness box. Barnard did acknowledge he had talked things over with friends of both sides in taverns and clubs. It was proved there were plans to have thugs from New York kidnap Drew in Jersey City; but these plans had miscarried.

Adams in his review of the case says frankly, a secret meeting was now arranged between Drew and Vanderbilt on a Sunday, when Drew knew the process men were off duty and he could venture to New York. Drew agreed to take back his Erie stock from Vanderbilt, but Vanderbilt was insistent Drew should go out of Erie. Drew was allowed to come back to New York unmolested and his overissue of stock no longer questioned. Peter Sweeney, a Tammany man, was named receiver and was paid one hundred and fifty

thousand dollars for his services. The lawyers pocketed their fees. The judges pocketed their bribes, and the might of the law was the laughing stock of the Street. So dropped the curtain on the fevered year of 1866–67.

But where were Fisk and Gould in this wild scrimmage of iniquity? Acting for Drew from beginning to end as brokers in the rail market. Gould went up in 1868 to Albany " to induce " the legislature to legalize the stock issues of Drew. The legislators required a lot of " inducing." There, Gould met Boss Tweed of Vanderbilt's Tammany Ring. Tweed had unaccountably one hundred and eighty thousand dollars of the stock delivered by Drew to Vanderbilt. Naturally, he wanted that made legally valid. Under oath Tweed later swore " the inducing " process emptied " a little black satchel " of a half million which Mr. Gould had brought with him to the Black Horse Cavalry to vote as paid. One senator's vote wouldn't stay put. At the last moment, when it looked like a tie, he raised his price to twenty thousand dollars. The law was passed legalizing the stock issue but forbidding any consolidation of the New York Central system with the Erie. This killed Vanderbilt's plan to consolidate the two systems.

One wonders what would have been the fate of the Erie if Vanderbilt had won.

Gould had been brought down from Albany under arrest on that prior charge of overissuing Erie stock; but when the sheriff went to seize the body of said Jay Gould, Tammany thugs interfered with the pro-

cess of the law. While the lawyers kept up a show of argument to midsummer of 1868 — largely to placate an enraged public — Jay Gould emerged from the scrimmage as president of the Erie, age thirty-four. What influences put him in, it is hard to guess. Perhaps Drew, forced out, wanted his man in to hold the loaded dice for future tricks. If so, he reckoned wrong on Gould. Once clear of that " old man of the sea," Gould charted his own course. Perhaps the legislators of Albany and the Tammany Ring wanted as president a man who could not tell all he knew of " rings inside rings " because he dare not. They were all heavy holders of Erie stock and did not want to see it footballed down again by Drew. Perhaps Gould's own consummate ability in handling men, and his still more consummate ability in keeping his lips sealed, commended him to all sides as the best compromise candidate to disentangle the Erie from the awful plight into which it had fallen.

As poor old Drew mournfully wailed, " there ain't nothin' more in Airy for eny ov us — Corneel."

It was an ominous sign that Fisk, Tweed, Sweeney, were now directors. Anyway, judges would obey their nod and the Erie would be free of contradictory injunctions and ravenous politicians demanding " blackmail " for votes. Cheaper to buy the voters, who created the judges and politicians!

But the banks had become gunshy. No more loans to Erie. It had at least forty millions of common stock on the market instead of the ten millions with which it had begun. In 1868, it could not sell a bond, and the

Exchange could not exclude it for fear of a universal panic. Up and down, wiggle-waggle went Erie stock. With Fisk as auditor, wilder and wilder went the spendings — eight hundred and fifty thousand dollars for the Grand Opera House; a million and a half for nine brownstone houses in Twenty-third Street, some of which housed Erie offices, some of which housed Fisk's show ladies. Old Drew must have taken fright at the wild pace; for he now turned on Gould and besought the courts to enjoin and remove the new directors. He was ghastly short of Erie stock, which he had again been trying to pound down. He was indeed almost down to the penury in which he died, dependent on poor relatives. Gould and Fisk were through with the pitiful old harpy. He was tossed aside as a worn-out tool, a victim of his own plots. The receivership came as already told with Gould as receiver and later as president of the reorganized Erie. Again a block of genuinely furious stockholders tried to oust what they called the Tammany Gang; but the Tammany toughs camped in the halls of the Erie offices and the minions of the law did not find it healthy to pass them, though it is a commonly accepted tradition that Jay Gould made exit from his offices several times over desks and through windows and down fire escapes, till fresh decisions ensconced him securely in the saddle. Henceforth, Tweed and Fisk and Sweeney were his office boys. They had simply changed their boss from Drew to Gould.

Gould meanwhile went ahead restoring the dilapidated Erie as revenues permitted. The restoration —

and perhaps paying off the hordes of leeches who had attached themselves to the line in ten years of terrible misrule, buying up the worthless stock with which Drew had flooded the market — sent the capital stock up to more than eighty millions. It was marked " paid up "; but paid how or to whom, the reports did not state. Compared to Vanderbilt's forty-two millions of " water " in the New York Central system, this looked like poisoned slime. The prices were so very low that English investors came buying in tempted by the reputation of Gould's abilities to restore a ruined line; and this led to one of the most amazing fiascos in all Gould's spectacular career.

A wife of Fisk's partner visiting in Minneapolis met a lion from the Old Country posing as a " Lord Gordon Gordon." True, he didn't say he was, or sign himself as " Lord " Gordon. What titled man would? But letters came to his hotel addressed " Lord Gordon Gordon," stamped with the Aberdeen crest. The little frontier city, now in the first mad scramble of its Northern Pacific Railroad boom, pricked up its ears and all social doors were thrown wide open to the suave, deferential, charming addition to polite circles. He was simply an accomplished swindler from Europe — living by his wits which were sharper than his courage and no remote relative to the Aberdeen Gordons; but the son of a poor man, with a past few knew except that he had had the knack of picking up such a veneer of polished manners as any sharp valet or hotel waiter could acquire. He did not say so, but he let drop mysterious, casual hints of being a

scout to look over cheap Western lands for fifty thousand or more British colonists. Cheap lands! The Northern Pacific had oodles of cheap lands — land grants. Forthwith, he was supplied with a private train to look over cheap lands. That entertainment cost the Northern Pacific fifteen thousand dollars. He selected his land and in his quiet way proceeded to a bigger field for operations — New York — where mysteriously enough he took quarters in a hotel owned by Tweed's son; and mysteriously, the whisper leaked out he was in New York with power of attorney to negotiate sixty thousand or more of Erie stock owned by English banks for the best value they could get; and again forthwith he became a lion in New York. Horace Greeley was taken in by the impostor. So was the president of the Pennsylvania Railroad. So were Vanderbilt and his family; but it was to the Erie crowd he drifted, though he at first questioned " whether it were wise to meet the Erie people when he was negotiating terms for English stockholders in the Erie." He was a wise boy — was " Lord " Gordon Gordon; and a keen student of human psychology long before character analysis had come in vogue. One can see Jay Gould pretty nearly jump out of his boots! *Sixty thousand more shares of Erie* tossed on the market would have smashed Erie values to the dust. Gould met him almost as a suppliant. Gordon treated Gould with scant and royal condescension. He would " refrain " from tossing these shares on the market provided Gould would resign the presidency of the Erie. The certificates were on the way from

London, and, on second thought, Gordon consented to refrain from ruining the Erie by such a move if he were compensated a million in good securities, half down to pay his expenses and negotiate delays with the English crowd. Now Gould was at this time having real enough trouble with genuine English shareholders, who had a beastly stolid British way of wanting facts, not explanations. The American Ambassador to England was plaguing his very soul. Like lightning Gould handed over to " Lord " Gordon two hundred thousand dollars in greenbacks and three hundred thousand dollars in other securities of the Erie's holdings.

What pricked Jay Gould's suspicions, he never told. He may have seen the British consul; but within twenty-four hours, early in the day, he stepped into Boss Tweed's offices on Duane Street with the astounding announcement: " Tweed, that Gordon is a scoundrel — I want him arrested."

Within half an hour, the Tammany chief of police, Gould, a judge, and a sheriff were in Gordon's hotel. Admitted to his parlor, they told him he must restore the securities instantly or he would be railroaded to prison till he disgorged. Gordon handed back the cash and gave an order on his broker to restore the securities; but Gould hadn't finished with him. He swore out an order for his arrest, and Gordon countered by entering suit against Gould for intimidation and breach of contract, but he was shy of court proceedings, was " Lord " Gordon Gordon. Leaving his friends thirty-seven thousand dollars in the lurch for bonds

for his appearance in court, he disappeared; and a year later turned up in the settlement of Headingly, just west of Winnipeg, Manitoba. His bondsmen were furious and dispatched two American detectives using fake Canadian badges and warrants to kidnap Gordon and slip him back across the border. At this time, just after the Riel Rebellion of 1871, Manitoba was not feeling particularly kindly to Minnesota for harboring Fenians and rebels. The detectives knocked on the door of Gordon's little farmhouse. He begged not to be taken back East through the United States and, on promise that he would not, asked leave to retire to his room and pack. A revolver shot sounded, and " Lord " Gordon was found with his brains blown out. If he had had as much daring as cunning, he might still have been a most dangerous foe to Gould; but he probably knew the reputation of those Tammany thugs towards a man in jail. Of course, such a violation of international law as fake detectives or kidnaping a man across a friendly neighbor's border provided leather-lungs with a theme for some months; but though Manitoba had no love for Fenian raids, she had less for fake English adventurers. Being an old Hudson's Bay Company town, Winnipeg had suffered too much from such gentry herself. After lying in jail a few weeks to teach them to observe the law, the detectives were quietly tried and sentenced to twenty-four hours' imprisonment. Discounting all the leather-lung rantings, it was pretty much regarded as a good joke on Jay Gould. It happened long before my day in the West; but was one of the

after-dinner jokes for a generation. Good old Hudson's Bay men, who knew fox pelt from common coyote, couldn't understand how Jay had been fooled by a common coyote.

Another similar story of a later date could be told, of another suave imposter on Mr. Gould, who trimmed Winnipeg of fourteen thousand dollars, where "Lord" Gordon almost trimmed Gould of half a million. That came in my own day and I recall the land operator telling me he "spotted" the crowd for their real value when the liveryman presented them with a bill for sixty dollars, and not one of "the oily pups had a dime"; but as the actors are all alive and all but the impostors innocent, the story may be forgotten. It was just typical of that curious weak streak or blind eye in Gould's otherwise almost uncanny reading of human character.

The early years of Gould's presidency of the Erie continued hectic. Fisk fell by an assassin's bullet in January of 1872, killed by a young man jealous over one of the showman's ladies. The Tweed Ring was driven from public life by the fury of an outraged public. The fearful crash of 1873 was hanging over the financial world like a sword suspended by a thread. In thirty years, the Erie passed through four receiverships; but all dated back to that era of lords of misrule, dictated by an ignorant old man, who died a pauper in the midst of senile dreams that he would go back to the Street and "lick the gang." There was never a scintilla of evidence at any time that Daniel Drew realized he had ever done wrong.

Here, the tragedy of the Erie must drop its curtain. That it survived at all was only another proof that progress goes ahead in spite of its tools. He who obstructs its way is crushed. Was Jay Gould crushed? No, but he died a burned-out candle at fifty-six; and I think anyone could easily win the wager that of his reputed fortune of from seventy millions to fifty millions, less remains to-day with his heirs than the original capital of the Erie.

He will come again in the story of Western rails. Was he the victim or the creator of his era? I answer again — I don't know. In his leisure, which was little, he retreated to his flowers, to his books, to his family. It was his appalling misfortune to fall into the coils of a Daniel Drew and gain his admission to the great financial center by the subterranean channels of the most corrupt city government New York ever knew. If he had had Vanderbilt's physique, he might have fought it and lived long enough to triumph over it, but he hadn't. He was frail of body and came to a prematurely foreshortened end by taking on his back greater loads than he could carry.

AUTHOR'S NOTE

In the story of the famous impostor Gordon, I have followed Mott's *Story of the Erie* and Dr. Folwell's *History of Minnesota Appendix Vol. III.* There were so many by-plays in the story, it had to be condensed here. For instance, President Folwell, drawing from contemporary or near contemporary accounts in the Manitoba *Free Press,* the Toronto *Mail* and St. Paul *Pioneer Press,* narrates how the first kidnaping of Gordon almost succeeded when Gordon escaped near the boundary from his kidnapers and went back to Headingly farms. The episode occurred long before my day in the West but most of the actors were living and prominent in Winnipeg when I was there. Bain, the lawyer, had become one of the foremost judges in the province.

Clark, mentioned as an attorney, became one of the writers on the *Free Press* when I was on the staff. Jack Benson, the liveryman, and "Doc" Benson, his brother, lived round the corner from us. The American consul — Taylor — was one of the most beloved men in Winnipeg. The thing was regarded for years as one of the frontier jokes of Winnipeg. American writers took the imprisonment of the kidnapers much more seriously than Canadians ever did. The troops sent West to quell the Riel Rebellion had been followed by too numerous an influx of English and Scotch adventurers of a worthless type for the hard-headed pioneers to accept them at face value. They consisted for the most part of useless "younger son remittance men," banished to mend morals and hide disgrace, or of obvious impostors — valets and adventurers — with a thin veneer imitation of former masters come West to teach "damned colonials" their place in the scheme of things; and "the colonials" reciprocated in kind. Looking back, I can see we were much too hard on them. Men soft of muscle, short of wind, flabby of backbone, didn't commend themselves by self-superiority to pioneers, whose boys shouldered all earthly belongings in a blanket and tent on their back, and with axe or pick hied them by shank's mare out to work on rail grading or in the woods at a dollar and a half a day and put themselves through college to become premiers, doctors, preachers. Anyway, when sheriffs with genuine Canadian badges got out to Gordon's lodgings to take him back to New York, he exhibited great terror of passing through American territory and, asking leave to go back to his bedroom, stationed himself against the wall and blew his brains out. On that point, there is no controversy. The explanation of why Canada left "the fake" kidnapers almost forty days in the old jail off Kennedy Street was purely political. Winnipeg was sore over threatened Fenian Raids from Minnesota, before and after the Riel Rebellion. She let the kidnapers cool their ardor in the jail, where they were treated more as guests than prisoners; and the final sentence of a day's imprisonment was Winnipeg's real valuation of the offense; but in the turmoil of a Minnesota election, the farce was whipped up to "a lovely ballyhoo" of international violations.

Quite different was the eruption of another group of French adventurers in Winnipeg in my own day, who imposed on Gould. Many of the actors in the first episode were also actors in the second. This group had genuine enough French titles and cut a swath one dull winter till it was found they did most of their ranching through the neck of a bottle and left unpaid debts from hotels to liverymen and farm bosses. In this case the joke was on Winnipeg, though I can't recall it ever got in the press. When the debts became too pressing, "the pups" — as I recall we dubbed them — hied them to Newport and when their success there became evident in headlines of great weddings to American heiresses, Winnipeg sent sheriffs with genuine warrants "to nab" the culprits after the ceremony. Alas and alack! The warrants were made out in the name of the wrong man; and the emissary from Winnipeg banks came back with nary a penny of the bad debts collected.

PART VI

The Forward March to the West

Chapter XX

How The Civil War Kicked Rail Progress Forward Too Fast For Its Own Good. 1860–1873

RIGHT here take a glance to grasp why Middle West population had jumped so fast in an era of Civil War in the United States and a German-French War in Europe. The colonists from Europe between 1848 and 1856, from Ireland, from Germany, from Scotland, had prospered amazingly in the United States. Indeed, they could hardly help prospering. They had come with thrifty habits, tireless ambitions, keen brains, and almost brute-strong brawn. They had reaped such prices for their labor as would be a rich man's income in Europe. Both the Crimean and the Civil War had filled their pockets. Their land had increased in value from one dollar an acre to fifty. Cities had grown up where they had bought farms. Word of all this went back to Europe by quick, frequent, cheap mails. All could get work — work at wages that seemed fabulous to people earning a few shillings a week as miners, farm laborers, sweat-shop toilers in European hovels, or even fishermen off the sterile rocks of Norway and Sweden and Iceland. Taxes in the United States seemed to be so low they were a joke compared to rents and rates on people living in the sod-thatched hovels of Europe. America now became a golden magnet. To the sons of Erin and Germany still coming in floods were added like human tidal waves from Norway, from Sweden, from Denmark, from Iceland, from

Switzerland — the very best Nordic stock in all Europe, of clean blood and thrift and high ideals; and this was yet increased by the Franco-German War of the seventies. Why toil in countries where taxes and rents and rates ate you up, when there lay across the Atlantic free land, low taxes, no rents and rates? When the Civil War closed in the United States, it was realized that however much or little great European banks had lost in American securities, there lay the land to which the poorest of the poor could go and if he worked — prosper.

First thought or, in legal parlance, "horseback decisions" would be that the Civil War must have crippled and stalled rail progress westward.

The exact opposite was the result. The Civil War kicked rail progress forward too fast for its own good. The Southeast suffered, particularly that border zone between North and South. The Middle West garnered enormous revenues from carrying war supplies. Farm produce sold at prices that turned steady heads dizzy. Middle West population jumped to eight millions in ten years and rails to a total of ten thousand miles. By the time the crash of 1873 came, the Middle West had fifteen thousand miles of steel. The great population filled freight cars going east and it filled empties going west; for when the farmer sells at a profit he can buy; and full cars going both east and west solve the hardest bit of arithmetic for rail finances. Rails can reduce rates and make up in aggregates. After the Civil War, they could sell their land grants to the disbanded soldiers. The soldiers,

who bought these land grant areas at from two and half to ten dollars, could again sell their output to the ever-increasing colonists and to the army men now detailed to duty in the Indian Wars. You will find few of the rails through the Middle West, from the high price era of the Crimean War to the higher priced era of the Civil War, which did not pay from six to ten per cent dividends and meet all charges on bonds. There isn't a doubt, either, that many a debtor paid gold debts in low-priced greenbacks. If he had had the wisdom not to go in debt in an orgy of frenzied speculation that ranged from crazy land values to crazier rail charters, he would have been opulent at the end of the Civil War.

The rail charters came from state governments pretty nearly as fast as printing presses could work. These began to be known as " wildcat roads." They were the first great evil resulting from land grants; and the stench of that evil still survives. Few of these roads were ever built, and those built were more for the purpose of getting the land grants than for possible revenues that could come from traffic for many years. They had first to get the settlers along their lines. They had next to wait for those settlers to become shippers and buyers; and in the interval, the Civil War ended. The high prices slumped. Sales of lands stopped. Interest could not be paid on bonds, and these lines automatically fell in the hands of the stronger lines, who bought them on the open market, or bought their low-priced bonds and foreclosed the mortgages. They help to explain the swift advance of

many a Chicago rail to the Mississippi and beyond the Missouri.

But this is not the entire story of the reaction from the Civil War. With the country torn by advancing and retreating armies, the Middle West could no longer depend on the East for equipment; so in this era also sprang up car shops, foundries, rolling mills for iron and steel rails — really the birth of big manufacturing centers in the Middle West.

In almost as great a blaze of triumph as the Erie had reached the Lakes, the Baltimore and Ohio had extended to St. Louis by 1857. More than fifteen hundred guests were on the excursion train. Flagmen patrolled every mile from end to end of the new steel rail. Orators orated from stumps as the train flew past on wings of steam. Pine torches flared their joy from lonely settlers' shanties and cabins as the red glow of the engine's headlight cut the darkness in the flash of a fiery sword and swept on with a roar into the night. Hearts beat fast as the palpitating chug of the iron monster. Bands serenaded at every station; and how the guests ever survived the banquets of welcome at St. Louis was a miracle of gastronomic impossibilities. There were ten toasts between courses, and five toasts afterwards, and speeches with each toast, and two extra speeches at the end; and when the weary travelers got back to Baltimore, the St. Louis banquet was repeated. The Baltimore and Ohio suffered much in that twilight zone between North and South; but it was in the defeated South that rails were crippled for almost twenty years.

Yet the heroism of steam's progress westward never flagged once in its worst era across the South. One adventure has been told so often it is almost as famous as Washington's cherry tree. Thousands of rail hands had enlisted in both North and South. The engine *General,* one morning in April of 1862, was hauling a passenger train on what is now the Nashville, Chattanooga and St. Louis, from Atlanta to Chattanooga. At Marietta some passengers in plain clothes had boarded the train for local points. They said they were escaped prisoners from the Yankees trying to get back to the Confederates. They were really disguised Federals led by a Kentucky man named Andrews. At Big Sandy, when the train stopped for breakfast, and the crews were off, somebody saw a band of strangers hop on the engine, uncouple from the passenger cars to rear and set off at terrific pace with the locomotive and three box cars. A Captain Fuller, an engineer, and a fireman from the shops got a hand car — one of the old fashioned " jiggers " — and set off in pursuit just as the flying Federals in disguise turned a sharp bend. The fleeing Federals threw crowbars, cordwood, anything they had across the track. The men on the hand car stopped, cleared the rails and set off again. Two more men with guns joined the hand car at Ackworth, and the soldiers of the *General* took advantage of the pause to pry loose two rails on a curve, which promptly threw the hand car with its crew into the ditch. At the next point a battered engine named *Yonah* was hitched to a coal car and with a band of

Confederates set off again at full speed, almost bursting its old iron shirt off as well as its wheezy boiler, to catch the Federals. The poor old thing made sixty miles an hour, when it seems to have expired from lack of breath and was exchanged for the *Texas* with one car; but again the pause had given the *General's* crews time to drop crossties as it bounded on, and while its pursuers cleared the crossties, the *General's* men ripped up two hundred feet of rails — then on it roared. Fuller and his shop foreman dashed ahead on foot and were lucky enough to meet a fast freight of twenty cars, which had just escaped collision with the runaway by being on a siding. He flagged them, jumped on, ordered the freight back at full speed to the siding, dumped the cars and by quickly throwing the switch had the engine back on the main track hind end foremost, pursuing so fast the cars on the siding and the engine ran abreast nine hundred feet; but the captain now had as crew only the shop man, the engineer, the fireman, and a wood man to feed the blazing furnace box. The next ten miles were made at almost a mile a minute, but the *General's* thunderous rush ahead had forewarned all little hamlets something was amiss and at the next point where the *Texas* slowed down, a gaping telegraph boy was grasped by the hand and hoisted on board. The exploit didn't do much good; for the Yankees had cut the wires. Fuller's aim now was to reach the next point before the Yankees could cut wires through to Chattanooga. The two crews could now see each other literally jumping along the rails. But the *General* hauled three freight cars. Its crew now uncoupled

According to *Appleton's Journal of Literature* of April 2, 1870 this picture shows "a scene in the famous railway-depot of Chicago, where we see gathered, for the departing train, a group, in striking contrast, of fashionable women, London cockneys, German immigrants, Western pioneers, native Indians, and ever-ubiquitous Yankees. This bustling scene, common to all railway-depots in our great centers, is designed by our artist to specially illustrate the famous passenger station of Chicago, said to be the largest and the handsomest in the world."

one to telescope the *Texas*. The *Texas* slowed down and coupled it on; and away she went. The *General* let loose another freight car. The *Texas* repeated its tactics. Next, the *Texas* dumped its two freight cars on a siding and bounded back to the main track with only the engine at fifty miles an hour. Again the *General* had taken advantage of the pause to wedge a rail across the tracks. How the *Texas* jumped that, the crew never knew. Its speed probably bounced it. By this time, pursuer and pursued were hurdle jumping into Dalton, where the telegraph boy was dumped off to wire Chattanooga to catch the *General*. The wire got through, but not the *General*. It was out of breath or out of water. Almost over the Georgia state line into Tennessee, the raiders jumped from the *General* and scattered for hiding in the woods. They were captured in a few days. All but two were Ohio men. Eight were executed in Atlanta as spies, six were exchanged with the North for prisoners, and eight escaped from prison. War is a cruel and relentless master. Few men live to-day who do not acknowledge both crews were heroes unparalleled in the Civil War. Both engines survived the exploit and the *General* is kept as a historic monument in Chattanooga. Many such exploits can be found in the memoirs of officers on both sides in the Civil War. In the South, bridges were burned, culverts blasted away, tracks ripped up, rails humped by heat or crowbars so they would throw trains of supplies and troops. Blacksmiths and carpenters became as essential to troop transports as officers.

The whole period is a horror memory in the annals

of Southern rails — a horror memory with the gold thread of heroism; but it should do much to soften our snap judgments on bonds repudiated by the devastated South after the war. Out of a great evil came a great good. It was now apparent that if North and South, East and West, were to be bound in union, Atlantic and Pacific must be linked in unbreakable " hoops of steel " — in transcontinental railroads.

Hitherto, voices calling for transcontinental railroads had been lone cries in a wilderness of amused indifference; but when both sides in the Civil War retired with hardly a family untouched by death, wounds, dispersion of relatives, destruction of fortune, the prevention of such a war ever again menacing the nation's existence came home alike to voter and financier. But, could such lines pay? They could not. Look up the old atlases published late as the eighties. Everything between the Mississippi and the Rockies was mapped " the Great American Desert " — North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Montana, Wyoming, Colorado, New Mexico, Idaho, Utah, Nevada, Arizona — all " the Great American Desert," the American Sahara. Do you realize that was not fifty years ago? Thirteen of the states richest in lumber, wheat, gold, silver, coal, tabulated as arid desert lands! Give the rails land grants in empires if they wanted them! What help would lands be? Again, as a record of fact — don't forget it, presently it is going to disturb your theories — even with empires of land, not a financier in the world could be wheedled, lured, coaxed to risk putting a

cent in transcontinental rails. Where would they end? Nowhere. What freight would they get except buffalo bones, hides, supplies for a few declining fur traders, a long, utterly unproductive haul over thousands of miles? Who were the settlers for desert lands except outlaws? What could such rails do which could not be better done by the Nicaragua route, or round the Horn in fast ships? Perfectly sound reasoning as to theory — sound reasoning proved by the crashes of 1873 and 1893; but utterly unsound reasoning as to fact, as will be found presently in the greater profits from long hauls than short hauls, and the stability of the transcontinentals in recent times. The reasoning was sound, but it did not pan out because those lands were not desert lands. The pioneer as usual was the pathfinder. Out of this obstinate, obdurate, ignorant attitude came the decision that really put national aid behind the first transcontinentals, and almost military armies in the field as their builders; and in no other way could they have been built at that time. In no other way have they been built either in Canada or the United States. With data of later development, you can argue your head off on that point; but without the transcontinental across "the Desert," that "Desert" could have been neither settled nor inhabited for a single year except by hunters, herders, and adventurers, who had really played with it from Cook's discoveries in the 1760's and La Verendrye's in the same century. First of all, in much of the desert in the North — and in much of the South on the high lands cold in winter as the

North — people could not live without fuel, could not live without houses, could not build houses without lumber, could not get lumber without rails, could not sell what they raised without rails to carry it out to market. Only four of the rivers — the Mississippi, the Missouri, the Yellowstone, the Columbia, — and these only in sections, could be called navigable. Settlement would have had to be confined in narrow strips along their banks. If it would not have been so confined, it would have gone ahead long ago. California had been known from Drake's wild adventures in the late 1500's. The Upper Mississippi and the Upper Missouri had been known since Radisson's day in the late 1600's, and La Verendrye's in the 1700's. Oregon had been known from Gray's discovery in 1792 and Lewis and Clark's explorations in 1803 to 1806. Yet apart from Oregon and California here, in the eighties, was still the Great American Desert. Wilkes' navy report was out in the forties proving this was no desert. Frémont's report was out presently proving the same. Yet no rail had gone ahead, no, not even in the gold rush of the exciting forties.

I don't know where poor Asa Whitney got what we would call the transcontinental mania — probably from the railroad atmosphere of Boston and New York, which had prospered amazingly from backing Middle Western rails; but his was the first voice to whom we can trace the call for steam to span from the Lakes to the Pacific. When the idea began to obsess him, he was a prosperous man. He was reduced

to the poverty of peddling milk for a living in Washington before he got Congress or finance to heed his call. Where should we rank such men — as cranks or prophets? I don't know. I only know Asa Whitney never got his dues in this life. I can only ascribe his place to one of those curious tools in Destiny's hand preparing the way for what was to follow and falling a martyr to his own idea. You will find many other martyrs in the same crusade, one whom the whole Southwest jeered at as a certain brand of fool; two others who went to their graves broken-hearted and deluged in infamy. You ride in the former crank's idea in the palace cars of the Santa Fé. You ride in the idea of the other two cranks in the Union Pacific's pullmans; and few of the millions who traverse both roads know as much as the names. They know the names of the Senators who opposed them. They know the names of European diplomats and army heroes, who deluged the world in blood; but they do not know the names of the men who built up their own land. Such a jade is Fortune! By such chances, as Carlyle would say, do men live in history.

Whitney was a New York merchant who had become rich in China trade. He had become as great an enthusiast on the Far West, as Forbes was of the Middle West. By lecturing and writing and making a general nuisance of himself, he had got a plan for a road from the Lakes to the Pacific before Congress in a memorial. This was about 1845. He did not ask one dollar's aid. He offered to make surveys and lay

ten miles at his own expense as guaranty of good faith. Then he asked for five miles along the road to reimburse his expense, and he would go ahead step by step ten miles at a time till he had crossed two thousand miles, when, if colonists followed the line, he would pay the government sixteen cents an acre, leaving Congress to fix rates forever. "I know," his petition adds pathetically, "someone's whole life must be sacrificed . . . what I propose to do is not for gain, but for the good of the whole country." His memorials were backed by all New England and much of the Middle West, but were received with good-natured indifference by Congress; first, because land grants had not yet become a fact and, second, because no one believed the desert lands were worth sixteen cents an acre.

Whitney suffered the fate of all men who are born before the time is ripe. He was crucified, not on a cross, but in poverty. The Congressional committees patted him on the back and said "fine"; then added under their breath "run away and don't bother us." Nevertheless, he did jab, stab, bayonet the hide of Congressional indifference into action. Douglas, Chase, Calhoun, did in the fifties provide funds for surveys of transcontinental routes. Whitney even got his plan into the party platform for 1856. I think, really, we should ascribe to Whitney rather than to Douglas the fatherhood of the land grant idea. Then the Civil War came along and, except for the surveys, the Whitney idea collapsed; and when it revived during the Civil War, there was the usual scrap be-

tween North, South, Middle West as to which section should have the first transcontinental; and when the middle line was chosen because it was best known as the Oregon and California trail of overlanders with the most feasible grades, though land grants were added to the first charter in areas that were empires, not a financier would touch the project with tongs. It simply couldn't pay. That was final. Cash boxes were clamped down and the lids locked.

But with the Civil War came a larger vision. Congress knew now that East and West had to be bound together. Desert or no desert, there must be no twilight zone left unbound in the great family of states. Congress amended its first idea for the Union Pacific Railroad which, in 1862, Lincoln had approved with aid of sixty-one millions in United States bonds at six per cent to run for thirty years, to be issued as work progressed, the bonds, of course, to be repaid. Keep that in mind. It explains the crash of 1893. The aid of United States bonds was approved for the simple reason that even Lincoln couldn't see settlers enough going in fast enough to support the road. The bonds were to be issued: sixteen thousand dollars for the easy level grades, thirty-two thousand for the foothills, forty-eight thousand for the Rockies; and not a cent on the line would be advanced before army engineers had pronounced grade and trackbed and curves A1. Still it didn't go ahead. What was the matter? Capital was the matter. Capital wouldn't go in the road unless the land grant was doubled and the government accepted second mortgages instead of

first, so the investor would have at least a gambler's chance of profit.

When the Union Pacific was openly discussed in the House, the member for New Hampshire said: "If the good God were to make that road for you right through, you could not form a company that would run it without failure. I would build it as a political necessity to bind the country together. Here is the money to build it." The member from Vermont said: "There is not a capitalist who will invest a dollar in it." A Massachusetts man stated: "The man is not born in this country who will ever see this nation get back this money. I would sink one hundred millions to build this road." Said the Indiana solon: "It is not expected that a cent will ever be repaid. This road is to be the highway of the nation. This will be a bonus as it ought to be."

First of all, did the original one hundred fifty subscribers of capital put any real money in?

Second, how much did the Union Pacific really receive in sales for its land, and what was it worth?

Fortunately, there are accurate records in answer to each of these questions.

When stock books were opened, thirty-one shares of one thousand dollars were subscribed, but only seventeen thousand was paid down.

Hah! — yell one side of the old controversy — didn't we tell you these scamps put in only a few dollars and then played loaded dice for millions! Hah-hah!

Wait a bit!

They paid down only a little over half of what they had promised because they hadn't any more money — not a dime. Also, when you begin to chase a rainbow and run short on cash, you are apt to sit down and figure. It's a way rainbows have when they begin fading to dull leaden clouds with storm signals out. The Illinois Central had cost thirty-three thousand dollars a mile. A little line up the Sacramento had cost thirty-four thousand. How in the world was the Union Pacific to get its lower level lines down at sixteen thousand dollars a mile and its foothills at thirty-two thousand? Thomas Durant of New York took a whirl at the stalled finance. He had many banking friends. He got 2,177 more shares subscribed at one thousand dollars each, and among the newcomers were August Belmont, and Scranton of the Erie. Ground was broken at Omaha in December, 1863, but all the first installments of three hundred thousand dollars were exhausted in surveys; and again the subscribers had a bad fright. They owed three hundred thousand dollars more. Should they send good money after bad? Durant had to assume personal responsibility on his own paper up to two millions before the company could get one cent from government bonds. Came an offer from one Hoxie to build one hundred miles at fifty thousand dollars a mile. His offer was accepted for 247 miles, to cost twelve millions. Others in the group did not like that contract. Between thirty-two thousand dollars a mile and fifty thousand dollars a mile was a wide spread for profit to the contractors. Of course, there was.

What contractor was going ahead to finance himself on a gamble without accounts padded good and plenty to cover his risks and his loans? For he had to pass every mile of track and grade under the eye of government army inspectors before the Union Pacific could draw a cent of aid in United States bonds. The contractor was to subscribe for a half million of Union Pacific stock. Was the little Ethiopian in the woodpile right there? The shareholders were liable to the entire extent of their fortunes to pay Hoxie. Was Hoxie in collusion with some to divide his profits? Fear of bad faith ran down the spine of many shareholders and they refused point-blank to come forward with their second installment. It looked as if, for all the aid promised, the Union Pacific had come to a second collapse.

Now comes the third factor in the Union Pacific's lame start for its race to the Western Sea. Oakes and Oliver Ames were two highly successful shovel manufacturers of Massachusetts. Oakes, as a Congressman on the Railroad Committee, had become deeply interested in the Union Pacific.

They formed a construction company under a Pennsylvania charter. That company was the famous, or infamous, Crédit Mobilier. Its excuse for existence was that no contractor would go ahead and earn the government bonds unless every shareholder would pledge his private fortune as security; and twice now, the shareholders had backed away from such terms and left the construction contractors in the lurch. The Crédit Mobilier moved its main offices up to

ATLANTA, GEORGIA.
AS IT APPEARED ON THE ENTRANCE OF THE UNION ARMY UNDER GEN: SHERMAN. SEPT 2nd 1864
View of the Passenger and Freight Depots
No 4

Atlanta, Georgia, had one of the earliest and best railroad systems in the South before the Civil War. This old print shows how it appeared on General Sherman's entrance in 1864.

The Civil War wreaked havoc on the railroads of the South. This old photograph shows a southern roundhouse at the close of the war.

New York next to those of the Union Pacific. The Hoxie contract and all its debts were transferred over to the Crédit Mobilier. To the Crédit Mobilier, the Union Pacific now transferred over two millions cash subscribed by the reassured shareholders. The whole arrangement was fraught with danger. The Union Pacific stood liable to the United States to go ahead and in thirty years pay the United States bonds; but the Crédit Mobilier took over the cash, sold the bonds, and used the cash. Anyway, two hundred seventy miles of track were laid and passed army inspection and the cash came across from the United States Treasury. The Ames brothers had become large holders in Crédit Mobilier stock. They were also on the Union Pacific board. Oakes Ames, who had vowed "if it took his last shovel," he would see the Union Pacific through, began to dominate affairs ahead of Durant. He believed the road would pay. Durant didn't. He believed the only profits could come from the Crédit Mobilier construction company.

Each man had pledged in cash every dime he owned. Naturally, working from different aims and pulling in different directions, their friendship broke and suspicions began to be whispered. Durant wanted Hoxie back to continue from the three hundred miles west of Omaha where the Crédit Mobilier had pushed. In 1864, the President of the United States was invoked and a commission was appointed, and the commissioners voted against Hoxie and Durant. It does not need telling from this time on — the fat was in the fire.

The defeated Hoxie-Durant party charged undue influence had persuaded the Congressional committee and the government commission. The Crédit Mobilier faction charged the Durant crowd were pushing through the road as a stock gamble on Wall Street for a line that they did not believe could pay, and that every time the stock went up they were selling as fast as they could on the New York market. As the government contract forbade the selling of the stock by the company under par of 100, and the stock was sold by the Hoxie-Durant crowd at 30 to 35, it was a case of the pot calling the kettle black.

As a record of fact, this part of the road was built by the Crédit Mobilier for twenty-seven thousand dollars a mile against the Hoxie contract, a saving of twenty-two thousand five hundred dollars a mile to the Union Pacific. Equally, as a record of fact, Crédit Mobilier stock was found in the names of Congressmen and Senators, for which no payment could be found on the books, and half a million dollars was charged to "suspense" account. Building had been suspended during hearings, but there is a sinister suspicion that suspense of another kind was meant.

But the Crédit Mobilier had to get cash to go ahead and to get that cash kept increasing its capital right up to $3,750,000 by 1867. To lure shareholders, the Crédit Mobilier gave one thousand dollars Crédit Mobilier stock for one thousand dollars cash and in addition gave a one thousand dollar bond on the Union Pacific. As the bonds were selling for exactly 85, the Crédit Mobilier stock was going across in the

shuffle at exactly fifteen per cent of the cash paid. By wild advertising — we would call it "wildcatting" to-day — subscriptions to the Crédit Mobilier poured in; for the investors really got a good United States guaranteed Union Pacific thousand-dollar bond and an equally good thousand-dollar Crédit Mobilier share.

Though the device kept building and grading and track laying going ahead fast as eight miles a day in places, no such financial burden on earth, not even a gold mine, could be carried by obligating two thousand dollars of debts for one thousand dollars of hard cash. The crash had to come. Would it come on the Union Pacific or the Crédit Mobilier?

Details of other contracts need not be given. They were similar; but the Union Pacific was now in the Rockies where track work did cost fifty thousand dollars a mile and, spread or no spread, the profits to the construction company, which was the Crédit Mobilier, must have vanished as the rainbow.

From the Rockies to the center of Utah, the Union Pacific had to build like mad; for the Central Pacific was coming east from San Francisco and each road was building in a friendly but frenzied race against the other to win the land grants and bond guaranties. The Crédit Mobilier had to get that aid, or go "stone broke." "The contracts were the wildest ever made by a civilized man," said Vanderbilt's son-in-law, who had bought some Union Pacific stock for the New York Central. But the trouble was that in 1867 there were not very many sane heads in the rail gamble. At

this stage, some builders telegraphed Ames they were out of money — should they go ahead? " Go ahead, if it takes my last shovel," wired Ames; and it went ahead at four, five, eight miles a day, costing for its

Joining of the Central and Union Pacific.
(The continent spanned. Scene at Promontory Point, Utah, May 10, 1869.)

On this historic occasion, after breaking a champagne bottle, the engines bumped noses and bowed; then wires sped the news east and west where church bells were rung in triumph

speed expenses alone an excess of fifteen hundred dollars a mile.

The road was completed on May 10, 1869; but money rates for loans to the Union Pacific had gone up to nineteen per cent. One government examiner flatly demanded twenty-five thousand dollars before

he would pass the road, " whether it met the requirements of the law or not "; " blood-money," " blackmail." How did the road stand on its completion? It owed, on first mortgage bonds and second mortgage United States bonds, $74,204,512. It owed to its stockholders $36,762,300. The stock was valued at 30, though at times low as 9.

The government got what it had paid for — a highway to the Pacific on which it held bonds due in 1893. As far as I can judge, the shareholders got a railroad of which their stock could not be sold above 30 and often went at 9; and the Crédit Mobilier got an Indian skullcracker's thud on its head, which smashed it; so the first question is answered: *What did the original one hundred fifty subscribers get out of it? They got absolute ruin.* Did the speculators in Crédit Mobilier shares make money? That is another question; and they undoubtedly did. When stocks fell to 7 and then jumped for no apparent reason to 35, somebody made money; but that was not the sin of the Union Pacific Railroad. It was then, and is yet, the sin of the vultures in the rail world, the sin of a little inside ring rigging the market and playing with loaded dice. It is the sin against which Professor Ripley's famous article came out. How such inside rings are to be kept from bedeviling sound ventures is one of the unsolved puzzles in the investment field on an open market. It has been done over and over again; and is being done over and over to this day. Posted names of actual sellers and buyers would be one remedy. Who is going to sell at 7, if the value is 35?

Who is going to buy at 35, if the real value is only 7? Daylight is one of the things crooked deals can't stand; and yet good things going cheap have been run up to such crazy values by a frenzied public that there is peril in that remedy, too. It is evident in every land boom, where the buying and selling is open as day. It has set back good land values twenty years, more times than can be counted.

Some curious byplays occurred when the crash came. Our old friend Jim Fisk made a dash at it in 1869, when Union Pacific stock was down to 9; but Fisk's career was cut short by that assassin's bullet in 1872. Vanderbilt's son-in-law, Clark, had begun buying at 30, but death also removed him, when Jay Gould gave orders to buy all Union Pacific stock up to 35. He had barely got control when, on Clark's death, the stock dropped to 14 and Jay Gould found himself in possession of the Vanderbilts' bad bargain. Gould had the Union Pacific on a dividend basis in three years, but the dividends as afterwards proved did not come from the Union Pacific revenues. They came from two Kansas lines, which the Union Pacific had taken over. Gould and his friends had control to 1878, but he also had his eye on those government bonds due in 1893, and he began to see that increase of settlements in Kansas would yield quicker stabler returns than a Pacific road. He sold out gradually and concentrated on Kansas and Missouri roads, which is another page of the versatile man's astonishing life; but when he stepped out, Charles Francis Adams, his old opponent on the Erie, became the

Union Pacific president and saw at once that dividends were a ruinous policy on a road which would in a few years have to meet a tremendous debt to the United States government.

The crash of the Crédit Mobilier long preceded the crash of 1893, which threw the Union Pacific in the hands of receivers. A presidential campaign was coming in 1872. The Crédit Mobilier offered a shining and very vulnerable target for charges that would spatter opponents. A House Committee of five was appointed " to investigate whether any member had been bribed by Oakes Ames." The thing dragged through two years and raised a stench that should have satisfied any politician. Oakes Ames had made frightfully careless and frightfully rash quick decisions to get his aid from Congress. He frankly acknowledged he had promised to carry Crédit Mobilier stock for Congressmen, who forgot to pay for it; and pending their forgetfulness, charged it to " suspense " account. He said he had to, or the building would have stopped. Then when Vanderbilt and Fisk and Gould began to come into the game and Union Pacific stock danced up and down from 35 to 14 and 9, those gentlemen began to call on Ames for their stock. As to pay, they averred they had paid in getting his inspections and bonds through; and Ames with every cent of his fortune pledged was a wasp — may have been an angry wasp — nicely held between the blades of the Congressmen's sharp scissors. If Ames squealed, they could block his road. Now that his road was built and he did squeal, they

squeezed him between the blades of their scissors. As the two investigating committees went on and on, the stock fell in value and the Fisk-Vanderbilt-Gould crowd dropped it like a hot coal, and Ames found himself expelled from the House and a brother member — James Brooks of New York, who also seems to have squealed — was given similar punishment. Both went to their graves within a year, heart-broken and disgraced, dazed and ruined. The country had demanded scapegoats and got them in Brooks and Ames; but were they the sinners or the greedy hands out for a bribe to do what the United States government had promised? The country was right in demanding punishment for bribe giving; but if it had gone farther and demanded penitentiary sentences for the bribe takers, it would have accomplished more for the cleansing of public life. As planned in the first place, the Crédit Mobilier was in no wise different from the Georgia Railroad Banks of an early day, which tided the rails past ruin; but as worked out by the stock jugglers and politicians, it resulted as the Erie had resulted — in ruin. Again it proves, as the Erie proved, that the wider rails and politics are divorced, the better for both.

To add woes to woes, the Crédit Mobilier was now suing the Union Pacific for payments still due on its work. At this stage, Jay Gould came in and struck back at the Crédit Mobilier with the counterclaim that its whole contract was illegal and that it owed its profits as a refund to the Union Pacific. The Crédit Mobilier could not stand an investigation

of its accounts, and passed off the Union Pacific map.

Then, who made the money? As far as I can judge not a living soul of the Union Pacific's sincere backers. The shareholders of the Union Pacific lost all. The shareholders who had retained the Crédit Mobilier stock lost all. The bribe givers lost all. What about the tricky jugglers with stocks on Wall Street? I can't just see that Fisk, Vanderbilt, and Jay Gould made money when stocks bought up to 35 went down to 7; but the government got what it had paid for — a national highway from end to end of the country; and though the road was sold after five years of a receivership for fifty-seven million dollars — when the Morgan banking houses would not touch it — its assets stand to-day at over a billion. The last of United States government bonds were fully paid and so was the interest. Such are the astonishing ups and downs in the railroad financial world.

What did the Union Pacific sell its land for? One writer says the lands netted, all in all, twenty-three million dollars but that was small compensation for a loss of one hundred and ten millions on stock and bonds. The rail record of its land sales stand from $4.47 in 1875 to $2.98 in 1876, $4.93 in 1881, $1.52 in 1884, $1.22 in 1886, $3.91 in 1888, $2.88 in 1894; or to a total net of over thirteen millions from Union Pacific lands. Lands to which it fell heir on branch lines chiefly through Kansas make up the balance to twenty-three millions. These Kansas lands sold up to high as $7.63 and down to lowest of $4.03.

Who could see that in a brief twenty-five years those very lands, from one hundred and sixty acres of oil, would yield as much as the entire proceeds on all lands to the Union Pacific?

Again, such are the astonishing ups and downs in the rail financial world; but the history of the Union Pacific's hectic financial career is pallid as the moon to the sun compared to the work of the builders out on the field.

Chapter XXI

The Man On The Job For The Union Pacific. 1860–1873

WHEN Asa Whitney stabbed Congressional indifference into sending out exploration parties in the fifties to survey where a transcontinental should go through to the Pacific, the path chosen was a route first made by the buffalo, next followed by the Indian, then traversed by white trader and colonist in the great rush westward of Oregon pioneers, California gold hunters, and Mormon colonists.

It was up the Platte Valley. A short Iowa line backed by Durant had employed a civil engineer — Peter Dey. From Norwich University up in Vermont had come a young cadet age twenty who drifted West in 1852 and worked under Dey as a rod man. It was a bitterly cold winter and the young rod man proved his mettle. He was no sissy, and stuck. It was not long before this boy was placed in charge of all the field work for Peter Dey. The boy's name was Grenville Dodge. In the fall of 1853, he had poled across the Missouri in flat boats. On the bluff where long ago the great Omaha chief had been buried astride his horse, Indians were still roaming and not more friendly than in Lewis and Clark's day. Dodge rode ahead twenty-five miles, telling the other boys to follow up with supplies, and had hobbled his horse and lain down for a rest with saddle for pillow and rifle at hand, when he was wakened from his nap by the snort of his horse. He looked up to see an Indian

pulling on the horse's bridle with might and main in one direction while the horse pulled back terrified in the other. Dodge says he was terribly scared himself, grabbed his rifle and started after the Indian " hollering at the top of my voice." The Indian evidently shared the trio of fright; for he let go and " skedaddled." Such was the introduction to the future life work as Indian fighter and rail builder of Major-General Dodge. It is rather comical to add that twelve years later that very Indian was one of Dodge's most valuable enlisted men.

Dodge also " skedaddled " back to his survey boys, who were surrounded by a rabble beggar band of Omahas and in fright were cooking all their provisions to placate the surly thieves. Dodge knew only one Indian word — " Puckechee " — " Get out " — but he yelled it — and they " got out." It was his first Indian command.

Durant, Dodge, and Peter Dey continued their surveys up the Platte from Council Bluffs through to Utah and the California and Oregon line. We know now why Durant and his friends were paying out of their pockets for all this survey work. They foresaw a transcontinental coming and were getting ready. Once on this survey work, when resting on the piazza of the little tavern " Pacific House " in Council Bluffs, young Dodge was joined by a tall angular frontier lawyer for somebody or other, who pumped him dry on facts concerning the Far West. The frontier lawyer was " Abe " Lincoln and it wasn't till afterwards, young Dodge realized that Abe had

" shelled my woods " and got away with a lot of information that ought to have gone only to his employers.

The Civil War came along, sweeping Dodge into its maelstrom, and in the midst of the war came up the building of the Union Pacific advocated very strongly from the first by Lincoln. Peter Dey was chosen to make the first reconnaissance for the line. Young Dodge was down in Mississippi as an officer guarding contraband camps, when he got an order from Grant to report at once to President Lincoln in Washington. Much alarmed lest his war record had been at fault, Dodge hurried to Washington, where he found that the President had called him to discuss which town should be the eastern terminus of the new Union Pacific. On advice of Dodge, Lincoln settled the point at Omaha, just opposite the place where the frontier lawyer had picked all the information out of the young surveyor's brain four years previous.

He again questioned Dodge on the proposed line to meet another line coming from San Francisco. Could the line be built? Yes, but it would be terribly difficult as a private venture. Lincoln's answer was, the government could give it all aid, but had enough on its hands in the Civil War without undertaking a railroad; so on the termination of the Civil War, the Green Mountain boy found himself drafted out of one army into another to build a railroad. Dodge went with the rank of major-general, as chief engineer. There was never a wiser choice made in railroad con-

struction. In the country through which the Union Pacific was to run, there were neither laws nor courts. Railroad camps would spring up mushroom-like with ten thousand tents, beset by every type of scamp that war and rail building drew — whisky bootlegger, gambler, painted lady, outlaw, braggart, bully. The construction man had to be judge and jury and executioner. Graders, trackmen, tie men, axe men, teamsters, herders, civil engineers, gangs, lived in what were military camps and proceeded in their work with almost military precision. Many had been former soldiers. All were drilled and sent to work with arms stacked against Indian attack, for the Civil War had shaken the Indian's faith in white man power and these rail gangs crossing the red man's hunting ground roused raiders from the Sioux of the North to the Utes of the South.

Parties of workmen went out in details of eighteen to twenty-two men under a boss. The boss was usually a former army boy — lieutenant, captain, sergeant. Advance reconnaissance gangs for the grading were expected to live as they hunted; but for the main gangs, numbering on the different grading sections often as many as twenty-five thousand men, provisions were shipped in from the Ohio, up the Mississippi, even across the Lakes. For farmers now suffering from the slump after the Civil War, this teaming and sale of provisions proved a bonanza exceeding the lure of California mines. Sometimes there were ten thousand teams on the trail and as many drivers. West of the Missouri, timber had to be hauled in by teams and construction trains for five hundred miles.

Work began at first streak of dawn and lasted to last blink of twilight; for each road — the Union racing west, the Central Pacific racing east — wanted to earn the greater share of land grant and cash aid through United States bonds. The surveyors could hardly keep more than twelve miles ahead of the builders. Have you ever watched a gang of repair men on city streets or country rails, when the boss's back was turned? One leans listlessly and rests. Another dreams in space. One proves the prize talker. While the drones pause, the workers hum. In Dodge's gangs, all hummed and they hummed in rank — so many men dumping the ties, so many leveling the grade, so many receiving the ties on spiked picks, so many getting the rails laid, so many with mallets to drive the spikes fixing the rails, and all with the automatic precision of an anvil chorus. Only hardened army men, and young at that, could have kept the pace. In twelve months, Dodge had 587 miles west of the Missouri located and built with equipped trains running; and he had transported every pound of supplies at least eight hundred miles and never missed a day's work from lack of any equipment. It was like the swift forward march of an army in close rank. An onlooker describes the gang work in these woods:

"We, pundits of the far East, stood upon that embankment, only about a thousand miles this side of sunset, and backed westward before that hurrying corps of sturdy operators with a mingled feeling of amusement, curiosity and profound respect. On they

came. A light car drawn by a single horse, gallops up to the front with its load of rails. Two men seize the end of a rail and start forward, the rest of the gang taking hold by twos, until it is clear of the car. They come forward at a run. At the word of command the rail is dropped in its place, right side up with care, while the same process goes on at the other side of the car. Less than thirty seconds to a rail for each gang, and so four rails go down to the minute. Quick work, you say, but the fellows on the Union Pacific are tremendously in earnest. The moment the car is empty it is tipped over on the side of the track to let the next loaded car pass it, and then it is tipped back again; and it is a sight to see it go flying back for another load propelled by a horse at full gallop at the end of 60 or 80 feet of rope, ridden by a young Jehu, who drives furiously. Close behind the first gang come the gaugers, spikers, and bolters, and a lively time they make of it. It is a grand "anvil chorus" that those sturdy sledges are playing across the plains. It is in a triple time, three strokes to the spike. There are 10 spikes to a rail, 400 rails to a mile, 1,800 miles to San Francisco — 21,000,000 times are those sledges to be swung: 21,000,000 times are they to come down with their sharp punctuation before the great work of modern America is complete."

Indian raids never ceased. Once when the graders were right at the end of the track and had left their arms stacked behind in a gravel cut, a bunch of young bucks sprang from the very ground, cut loose the teams and stampeded the horses. They got away with them, too, though they didn't capture the graders' firearms. For just one minute those graders sprinted

for Dodge's caboose car, which was in the thick of it; and Dodge had loaded firearms ready. Dodge describes his own car as "a traveling arsenal."

Only two hundred miles west of the Missouri, an Indian band captured a freight train and its crew. With twenty men, Dodge ran down to the captured freight, deployed his band in a circle — when the captors scampered.

The speed of this construction had never been surpassed till the World War, when some rails from Egypt to Palestine went down as fast and in raids came up as fast.

On another occasion, working west from the North Platte, an engineer and eight of his helpers near what is now Red Desert, heard a yell and found themselves encircled by three hundred dancing, prancing Sioux warriors zigzagging in pantherine approach to avoid bullet. Brown dashed for the top of a small hillock and fought off the raiders from noon to night, when he fell, shot below the belt. He ordered his helpers to escape under cover of darkness and leave him to his fate. The Indians had now captured the surveyors' horses and would likely draw off till morning. The helpers refused to abandon their head surveyor. They made a litter of their carbines and packed the wounded man back fifteen miles through sagebrush to camp, where he died almost at once. Not so different from war heroism, is it?

Another day, a band of reconnaissance men coming from Green River east with teams lost the trail and for nearly a week had been without water except

dew and such damp as could be lapped from drying springs. Men and teams were fevered, fagged, parched, staggering to death from thirst. All were saved.

In the mountains, the Union Pacific received its highest grants from the government, but it was terribly close to the bottom of its cash box; for the government aid came through only as the sections were completed and inspected. It was at this stage, Ames had wired, " Go ahead if it takes my last shovel." At this stage, the Irish laborers were so sceptical of the Union Pacific ever going " through," they demanded and got each day's pay before they would go out to work.

Crossing the Wasatch Mountains to Salt Lake on sledges, the engineering brigades found the poles of the telegraph lines buried in snowdrifts. Forcing the grading through the Wasatch in winter added ten millions to the cost of the Union Pacific. " Spring of 1869, found us with the track at Ogden and by May 1, we had reached Promontory." Chinese, Mexicans, half-breeds, wild fur traders, negroid outlaws — every class on earth had gathered from the wilderness to witness the great event.

Let us quote from Dodge:

" The Central Pacific had made wonderful progress coming east, and we abandoned the work from Promontory to Humboldt Wells, bending all our efforts to meet them at Promontory. Between Ogden and Promontory each company graded a line, running side by side, and in some places one line was right

This Currier and Ives print of 1868 represents a scene of the transcontinental railroad journey in the 'sixties. The train is overloaded with immigrants; the pioneer village with its log cabins and school house is typical.

This map shows the United States, including Oregon and Texas, in 1847. The upper dark line stretched across the continent indicates the contemplated Oregon Railroad.

above the other. The laborers upon the Central Pacific were Chinamen, while ours were Irishmen, and there was much ill-feeling between them. Our Irishmen were in the habit of firing their blasts in the cuts without giving warning to the Chinamen on the Central Pacific working right above them. From this cause several Chinamen were severely hurt. Complaint was made to me by the Central Pacific people, and I endeavored to have the contractors bring all hostilities to a close, but, for some reason or other they failed to do so. One day, the Chinamen, appreciating the situation, put in what they called a " grave " on their work, and when the Irishmen right under them were all at work let go their blast and buried several of our men. This brought about a truce at once. From that time the Irish laborers showed due respect for the Chinamen, and there was no further trouble."

It had been arranged as the Union Pacific and the Central Pacific approached the meeting place at Promontory, that trains from New York and California should be there to celebrate the great event. Rails were placed right up to the meeting place so the engines bound west and the engines bound east could bump noses, or speak in the language of a steam hiss, or a whistle, or a gong, or any other polite way engines have of greeting except in collision. Of course, Durant and his associates were on the Union Pacific train; and of course, Leland Stanford, Collis P. Huntington, Crocker, and other San Francisco men were on the Central Pacific train. Here is the ceremony as described by General Dodge:

cession of 4 miles in length, a lavish display of decoration in the city and on the vessels in the river, and an address by Vice-President Colfax in the evening were the evidence of the city's feeling. In New York, by order of the mayor, a salute of a hundred guns announced the culmination of the great undertaking. In Trinity Church the Te Deum was chanted, prayers were offered, and when the services were over the chimes rang out 'Old Hundred,' the 'Ascension Carol,' and fire stations in Philadelphia produced an unusual concourse of citizens to celebrate the national event. In the other large cities of the country the expressions of public gratification were hardly less hearty and demonstrative."

The event was likewise celebrated in the following lines:

WHAT THE ENGINES SAID

What was it the Engines said,
Pilots touching, — head to head
Facing on the single track,
Half a world behind each back?
This is what the Engines said,
Unreported and unread!

With a prefatory screech,
In a florid Western speech,
Said the Engine from the WEST:
"I am from Sierra's crest;
And, if altitude's a test,
Why, I reckon, it's confessed,
That I've done my level best."

Said the Engine from the EAST:
"They who work best talk the least.

S'pose you whistle down your brakes;
What you've done is not great shakes, —
Pretty fair, — but let our meeting
Be a different kind of greeting.
Let these folks with champagne stuffing,
Not their Engines, do the *puffing*.

" Listen! Where Atlantic beats
Shores of snow and summer heats;
Where the Indian autumn skies
Paint the woods with wampum dyes,
I have chased the flying sun,
Seeing all he looked upon,
Blessing all that he has blest,
Nursing in my iron breast
All his vivifying heat,
All his clouds about my crest;
And before my flying feet
Every shadow must retreat."

Said the Western Engine, " Phew! "
And a long low whistle blew.
" Come now, really that's the oddest
Talk for one so very modest, —
You brag of your East! *You* do?
Why, *I* bring the East to *you!*
All the Orient, all Cathay,
Find through me the shortest way,
And the sun you follow here
Rises in my hemisphere.
Really, — if one must be rude, —
Length, my friend, ain't longitude."

Said the Union, " Don't reflect, or
I'll run over some Director."

Said the Central, " I'm Pacific,
But, when riled, I'm quite terrific.
Yet to-day we shall not quarrel,
Just to show these folks this moral,
How two Engines — in their vision —
Once have met without collision."

That is what the Engines said,
Unreported and unread;
Spoken slightly through the nose,
With a whistle at the close.

Who could guess that in three brief years the railroad then evoking the plaudits of the world would be sitting in the pillory of public opinion; that in another twenty years, it would be sold as a bankrupt on the block for fifty-seven millions; that in still another twenty years, it would rank as one of the soundest, richest revenue producers in the world of rails? And there was not a living soul — not even Lincoln and Dodge — who sponsored it, not a living soul except the Ames brothers, who thought it ever could or would pay. Recall the Congressman's prediction, " I believe that if the good God was to make that road for you, right through, you could not form a company that would run it without failure "; or the other wild statement: " The man is not born in the country who will ever see the nation get back this money."

Chapter XXII

Getting Across The Sierras And The Big Four Of The Central And Southern Pacific. 1860–1900

WE left the engines on the Union Pacific from the east and the Central Pacific from the west bumping noses, blowing off steam jubilation, ringing bells and puffing out: "I thought I could — I thought I could — I thought I could — Now I know I can — I know I can — I know I can."

When the exaltation of triumph had passed at Promontory Point in Utah, the story still remains to be told of how in the world the steam flag of progress had succeeded in climbing to the stars over the tops of the impassable Sierras. You recall that sign in Chicago — "No bottom here." It was worse on many a street of the little cities dotting the Pacific Coast. The silt coming down from mountain streams in the spring thaw left a morass of glue adobe that seemed a bottomless bog. In the era of the gold rush, one street in San Francisco displayed a sign — "Not passable! Not even jackassable!" What this meant in a climb from sea level to the stars of the Sierras, only road engineers could guess on estimates. It meant twice as heavy ballast for roadbed, treble and quadruple filling for the frail trestle bridges that zigzagged across mountain streams, which had to be followed to find a pass through the Sierras, blasting of rocks along the face of mountains whose rocks would not stay put after they were blasted. Then

when the high passes were reached, was construction more difficult in summer or in winter? Summer thaw brought avalanches of snow and mountain torrents in floods. Winter above timber line brought drifts from fifty to one hundred feet above roadbed. In fact, at two of the greatest summer resorts in the world to-day in the Northern Cascades, snow lies at a level of one hundred feet above entrances to lodges where tens of thousands of tourists are parking motor cars by May and June. These are hard figures for an Easterner or Middle Westerner to credit with his experience of a snowdrift limited to the top of a barb wire fence.

Yet the Central Pacific could brook delay of neither summer nor winter by so much as a day. The land grants and the bonds endorsed by the Federal Treasury for the same amounts as the Union Pacific were forthcoming on the same fulfillment of so many miles constructed and passed and so many miles inspected by government engineers. The road with the longer mileage before meeting the other road would get the bigger grant. Crocker, who really became the driving power on the Central Pacific, is described as forcing work ahead "like a mad bull." He had to, or the Central Pacific would have collapsed. When engines met and bumped noses in Utah in 1869, the Union Pacific had 1,086 miles to its credit from Omaha, and the Central Pacific had 689 miles from Sacramento.

While the Union Pacific could get a splendid working force of discarded soldiers from the Civil War,

In the early days of rail travel across the mountains there were many desperate battles with snow storms. This train of cars is snow-bound in a drift near Ogden, Utah. Many of the laborers are Chinese

the Central Pacific had to rely almost entirely on cheap Chinese coolie labor. It was cheaper both in wages and food and the coolie balked at nothing in the way of hardship and long hours; but it hardly needs to be told that no coolie could stand up in heft and sheer endurance against young soldiers hardened by the Civil War.

These were the factors which kept the two rails racing for the meeting point pretty well equalized as to advantages and disadvantages. The Union Pacific had to haul timber over hundreds of miles in arid lands, which added enormously to the cost, but the Central Pacific had to bring all its equipment, all its flat cars, every pound of iron and steel by ship round the Horn or across Panama. In one case it had to charter vessels at an exorbitant figure to get construction equipment in on time for summer speed. The Union Pacific could get its equipment in over its own rails fast as laid; but the Central Pacific could get all the timber for ties and trestles on its right of way at no cost but labor. The Union Pacific had to fight Indian raiders every mile from Kansas west; but the Central Pacific had to fight winter snows. The greatest hardship which the Central Pacific met was that it could not get its land grants surveyed and certified in time to make the slightest use of them, either in sales to settlers or as a basis for bonds to raise the desperately needed cash for speedy construction. There were old Spanish land grants to be settled in American courts, which did not exist; and there were vast areas in the Sierras, where surveys

were not made till many years after the Central Pacific had been a running road. This explains why Central Pacific stock went begging at ten cents and seven cents on the dollar, and why its founders had to hang on because they couldn't sell out. They couldn't find a buyer. They had to hang on — which their heirs, no doubt, count as sheer luck — hang on almost to 1900, when the dispersion of the Huntington estate for the first time put such shares into the hands of bankers and the public.

The Union Pacific became smeared in the Crédit Mobilier scandal; but the Crédit Mobilier was dragged in all its ugliness to the light of open day. The public could judge for itself where condemnation was due, and where extenuation. In the case of the Central Pacific, involved in just as ugly, malodorous construction scandals, the public could never get the records in evidence, because they had been utterly destroyed. It does not matter much to-day whether the records had been "crooked and cooked," or an absconding employee had lost them to save himself, or they had been burned in the fires that swept San Francisco three times in ten years, or a pliant tool had fled to France and dumped them in the Seine. All four explanations have been given. The point is — when ugly charges are made and no records exist to prove or disprove — the smear sticks. Any charge can be made and can't be proved or disproved, and this explains the ferocious attacks on Central Pacific and its child, the Southern Pacific, and all its hosts of grandchildren in the way of waterfront terminals

and free grants for town sites and playing favorites with friends, until it was split up in the great modern systems — the Union Pacific and the Southern Pacific.

The story begins before the Guadalupe Hidalgo Treaty of 1848, when California became American territory.

Cortes had tried to follow his conquests of Old Mexico with marine discoveries up the Pacific Coast. His main discoveries did not go far in either Lower or Upper California. He was too far from his base of supplies on the Atlantic and had too many envious enemies back in Spain; but the priests did carry on. Whether over the desert sands from Mexico City to Santa Fé, and across to California up the Pacific Coast beset by Apache, Yaqui, Pima, Papago, they got into California from what is now San Diego to San Francisco; and there behind their adobe walls, with the free and often enforced labor of slave Indian converts, cultivated the orchards of oranges, of limes, of lemons, of grapes, of walnuts, which have laid the foundations of more California fortunes than all the gold rush of '48 and '49. To be sure, at one period, Franciscans and Jesuits hated each other almost to the point of wanting " to scratch eyes out "; and at a later period, the secularizing of all missions left the priests stranded on their own resources. By that time, their own resources left them independent of help from the Pious Fund of Old Spain or the treasure boxes of Mexico City. They could trade their fruits and vegetables and wines to the coasting vessels of all nations; and though the wine might recall terrible

pioneer memories of martyr blood shed in Indian raids, or more terrible deaths from maddened thirst crossing the deserts, certainly from 1800 to the American period of 1848, the life of the missions was placid, plentiful, peaceful, as few eras in human records.

If it be asked, did not the missionaries carry the cross in one hand, the sword in the other? The answer is, yes, they did. They came in first as chaplains to conquering armies; but what armies! Except for young lieutenants of pure Spanish blood, the soldiers were ragged corporal's guards of twelve or twenty men, with muskets and ammunition enough, but for the most part minus clothing sufficient for pantaloons — only dirty shirts belted in and feet encased against cactus spines and hot sands in sandals and rawhide shoepacks. Both before and after Spanish power had been cast off, from 1812 to 1820, most of the soldiers were convicts of too black a dye in crime to be used in Mexico. They were more a curse to the missions than a blessing. Their crimes among the Indian women provoked constant reprisal raids. It was hard to make converts among tribes, when the white men seen outside the missions were as arrant a set of scoundrels as ever darkened the pages of pioneer life. The missions, by persuasions of love — backed by occasional whippings — might hold the Indians loyal; but they also protected them from slavery in Mexican mines and loot and outrage at the hands of frontier riffraff. The picture of the conquering Spaniard, with soldiers clad from head to heel in armor and padre with flag and cross upheld

as Indians knelt for blessing, may be artistic as it is embedded in memory from countless paintings. It is a very impressive and beautiful picture as a work of art, but about as fantastic and far from fact as fat old Father Christmas coming down a chimney flue eighteen by eighteen inches when the old chap's belt really measures close to fifty.

While one trend of newcomers followed overland, from Old Mexico came another alien trend by sea. If you will look at a map of California, you will see there were few harbors where ships, whether explorers like Cook and Vancouver or fur traders like the New Englanders and the Russians, could put in for repairs and supplies. San Diego, yes, excellent, though the sleepy Spanish commander might fire one shot from his solitary cannon across the intruder's prow to keep him out and then welcome him with a laugh that he had to obey " orders " but was really anxious to trade his wines and fruit for the lovely silks and shawls and teas and spices from the Orient. You will find those old priceless shawls among Spanish families to this day. Then Los Angeles, or rather a bay in the Catalina Islands, where ships could careen and scrape the barnacles from keels and hulls and replace stern and fore posts almost " honeycombed " by what the early seamen called " the sea worms of the Pacific." From Catalina northward was a different type of trade. Descendants of the Spanish lieutenants and Mexican soldiers enjoyed the easiest and most halcyon life ever lived by a sunny people in a sunny clime. Stock could winter out. The black cattle could

thrive free, summer or winter. Land grants of from one square mile to thirty square miles had paid soldiers' and officers' wages. Haciendas with adobe-walled gardens gave the security of almost army life to the ranchers; and the flesh of the black cattle yielded hides for clothing, tallow for calking ships and a dry meat nutritious and weather-proof as the prairie buffalo. Thither came the fur trade vessels in flocks like sea birds winging south as the gales off the North Pacific drove them from Alaska and New Caledonia and Oregon shores; and here they were welcomed much the same as at San Diego, with a show of "keep out" to obey commandant's orders and a laugh of "come in" to welcome with wines. Then Monterey, a great center for years, then San Francisco, then Bodega Bay, where the Russians had a grant from the Indians after the time Astor had gained foothold on the Columbia. It is said this Indian title cost the Russians three blankets, two axes, three hoes, and a bag of beads; but it gave the Russians a place for a fort and a land to raise wheat for their traders up at Sitka. If space permitted, the story could be told of how the Russians got the consent of the Spanish commandant to this colony by wooing the daughter of Arguello, Donna Concepción, poor little signorita, whose lover perished going back to Russia and she herself found consolation in a convent. Anyway, the Russians were firmly installed before the revolutions cut off all Spanish ties.

If another question comes up — how could the

Spanish wander over all this territory without stumbling on the very gold that peopled California, the answer is simple. The Spanish did not go back from the coast. With convicts for soldiers and Indians for enemies, they did not dare; so they missed the lure that had entrenched Spain in Mexico for three hundred years. Else California might to-day be a Latin-American republic.

But long before gold had brought American population in a stampede to the Pacific Coast, the ubiquitous fur trader had been drifting in — drifting from Oregon on the north, from Santa Fé and Taos on the east, yes, across from Ogden's Hole and Salt Lake, though he usually got through with little more than his scalp. As the fur trade played out up in Alaska with decreasing sea otter and was thinning so in Oregon that British traders were preparing to move up to British Columbia, many an independent trader bethought him of that genial clime where ranchers lived a secure life behind fort walls and nature did the rest to give him plenty.

In the topsy-turvydom of revolution after revolution up to 1848, it was not a difficult matter for an alert American to attach himself to the party he thought might win and get a land grant where he settled down to a life of well-earned and much-needed repose. His fees for a land grant that might run from six to twenty miles seldom exceeded twenty-six dollars. There he planted him oranges and lemons and figs and walnuts and quinces and, turning out his black cattle or sheep with a Mexican herder, took his

ease in one of the most romantic periods in Californian history.

Little need be told of the events preceding the treaty by which California became American territory. President Polk would have bought California at any time for from four million to fifteen million dollars; so would Sir George Simpson for the Hudson's Bay Company. Simpson's plan was to swap the debts of Mexico to English bondholders for California; but owing largely to the report of a naval man — Gordon, relative of Aberdeen — more renowned for his verdict than anything else in his history — "Oregon not worth a damn" — the British government would not support Simpson. The newly-born Mexican Republic could not hold Upper California for the same reason that Cortes failed to push discoveries — too far from base of supplies and utterly inadequate and unreliable military forces. Californian independence under Mexican leaders was torn to shreds by revolution after revolution till it fell to American control and that through three factors — American battleships off Californian harbors, American support on land, and the deadly disgust of the old Spanish ranchers with disordered anarchy in the country. When Commodore Wilkes was in California in 1841, the presidio of San Francisco was deserted. It had exactly one officer and one barefoot soldier. When Simpson was in Monterey a few years later, he found its fort in almost as great disrepair, though the ranchers and missionaries and Spanish families still lived their lives of isolation and plenty.

It is necessary to telescope back to this past history of California in order to understand why, when thousands of miles of steel rails had been constructed in the East and Middle West before 1862, California had little else than charters stillborn from her state legislature and one little line up the Sacramento Valley. It is farther necessary, because any man with the foresight of a child must have figured how, with the fur trade passed forever and the gold boom subsiding after producing half a billion in twenty years, a new era was dawning in which fruit and wheat and cattle ranch would provide traffic for a railroad if only the two terrible impediments of the impassable Sierras and the raising of capital could be surmounted.

Fortunately, though the subsidence of the gold boom left the usual human wreckage in its wake, it left something much more valuable. When the Erie had been chartered long since in the East, ten millions was considered a stupendous capital; but in a country where half a billion had been taken by surface mining in twenty years, men ceased to think in thousands or merely millions. It was as if a penny held too close to the eye and cutting off vision of larger things had been suddenly removed and men began to see farther, perhaps dazzled a little but, withal, seeing a bigger, better, surer future.

Statehood had to come to maintain order in the mushroom growth of cities and settlement. With statehood came the land grants in Lincoln's day. When California heard that land grants had been signed by Lincoln, such jubilation raged in San Fran-

cisco as the city had not known in the gold rush of forty-eight.

"A multitude of flaring lamps and torches and blue lights, with any number of banners; over fifty transparencies of red and white and other colors; fountains of yellow sparks bubbling up every here and there; meteoric white and red and blue lights shooting hither and thither from Roman candles; and rockets soaring high into the air leaving long tracks of yellow sparks and then bursting in many colored balls overhead — thus the long and brilliant procession marched in a blaze of lights, while the air was thick with smoke and loud with the music of clamoring bands, shriekings of the steam whistle and the thunders of cannon."

But rails had been delayed by the Civil War till Congress decreed as a matter of national necessity a middle belt of steel: the Union Pacific to build from the East west, the Central Pacific to build from the West east. It is hard to realize while "the tumult and the shouting" were dying in the East over the Erie triumph to be succeeded by all the monstrosities of the Black Horse Cavalry up at Albany, that out on the Pacific Coast in such a drizzling rain people had to stand on hay to keep from getting their feet wet, the first spade of earth was being turned on the Sacramento in January, 1863, for the Central Pacific; and when someone wanted to celebrate the laying of the first rail, Collis P. Huntington returned with that bluntness which made him so many foes, "If you want to jubilate in driving the *first* spike here, go ahead

and do it. I don't. These mountains look too ugly. I see too much work ahead. We may fail. There are many months of hard labor and unrest between the first and last spike." The road had been incorporated in June, 1862, with a capital of eight and a half millions of which ten per cent had to be paid in.

Before taking leave of the old era, let us see what the new steel rail was supplanting! Caravans of ten to twenty wagons set out with four to ten mule teams from Los Angeles for Salt Lake; and the freight was twenty-five cents a pound, or five hundred dollars a ton. Letters from New York might come in four months, but more often took six to eight. They were carried from the Missouri and Mississippi by pony express. Professor Cleland says nearly eight hundred men, a thousand horses, five hundred mules were needed for the stage traffic of passengers across country. Passengers furnished their own meals, could carry forty pounds of baggage and had adobe sleeping and cooking stations at intervals. The passenger was also forewarned — please note, it resembles the first traffic down Ohio River — to carry one rifle, one hundred cartridges, a revolver, two pounds of bullets, a sheathed knife, and to wear thick socks, woolen shirts, a broad-brimmed hat, and have on hand for the cool nights, blankets, a rubber cover, towels, and toilet articles. The fare one way between St. Louis and San Francisco was two hundred dollars. In 1860 letters by pony express from Pacific to Atlantic cost five dollars each.

But they were "good old days." They produced

men and women of heroic mold; or the Central Pacific would never have been built.

There had come to California in 1854 a young engineer, Theodore Judah, of Connecticut. He had been a construction man on the Troy and Buffalo branches of the New York Central and had then worked on that little branch road up the Sacramento. He had also been a surveyor in that Peter Dey group of Union Pacific men and was one of the California delegates most actively engaged in persuading politicians in Washington that a transcontinental could be built across the Rockies. When he returned to California in 1860, he had worked eastward from Dutch Flat far enough to know there was a pass through which a rail line could surmount the seemingly impassable wall of the Sierras. The discovery excited him so that neither he nor his wife could sleep. It is told rather sardonically to-day how when all men doubted ever crossing the Sierras, among those who contributed to pay his survey expenses was a hardware merchant — Huntington — who gave a barrel of flour. As a barrel of flour varied in value all the way from fifty to three hundred dollars in the gold era, it was not so insignificant a contribution to a great adventure as it seems. It would at least keep Judah and his wife alive on their camping expeditions. Of all the contributions made in Dutch Flat to the survey costs, not one exceeded fifteen dollars cash and nine were for only ten dollars each. In spite of the gold boom, by 1860, though hope was high as the " ugly mountains," men who hadn't struck it rich were exceedingly short on

cash. Judah figured the road would cost seventy thousand dollars a mile; but when he opened books and asked for only ten per cent subscriptions down, few subscribers came in, mainly because the new state laws made subscribers liable for all debts of any company in which they held stock. Sacramento — the new capital — was not a rich town and up to the granting of lands and guaranteeing of bonds, the total of cash promises — not the cash, itself — did not exceed fifty-seven thousand dollars; and all came from Sacramento, not San Francisco.

When the United States Treasury appeared on the horizon as a backer, there came into the Central Pacific the Big Four — Collis P. Huntington, Leland Stanford, Charles Crocker, Mark Hopkins. Huntington and Hopkins ran a hardware store, which was, of course, prosperous; for whether miners succeeded or failed, they had to have picks and pans and spades. Stanford and Crocker were general merchants and rated as prosperous. Anyway, Stanford had ambitions to be governor and was elected on the Republican ticket in 1861. Huntington, who had been a peddler of watches from New York to Missouri and had joined the gold stampede with savings of twelve hundred dollars, "increased to $4,000 by swaps as he crossed Panama," had worked up in Sacramento to own a business worth perhaps twenty-five thousand dollars. He was regarded as a "hard man" in business, not the open-handed easy-come-and-easy-go typical miner, who scorned small change under twenty-five cents. One would expect that of Hunting-

ton. He had been born in Connecticut and paddled his own canoe since he was fourteen. Stanford was a young lawyer from New York State, who had been in Wisconsin up to 1852 — a rather bad period in Wisconsin for rails. Stanford and Crocker were estimated to be worth about sixty thousand dollars. Crocker had been a peddler, a gold miner, a trader. He weighed between two hundred sixty-four and two hundred seventy-five pounds, five feet ten and three-quarter inches tall, and is described as " a mad bull " in driving power. Hopkins was the quiet accountant type, " the balance wheel," the long head, not daring, but careful of each step. Sift each man's later biography as you like, that is the most you can dig out; but it made a rather remarkable quartet, men worth together not more than eighty-five thousand dollars were not appalled by a venture calling for over eight millions capital and ten per cent to be paid down. Two or three others were called into the group, but each would assume only one-seventh of cost for surveys alone; and by 1862 Judah had raised his estimates for the mountain sections to over eighty-eight thousand dollars a mile. The estimates were, of course, far too low. No difficult rail section across mountains has ever been built for that figure; but Judah enthusiastically probably figured that once such a double team had been hitched to the plow, they would not let go till they finished the furrow; and he was right. They didn't, though Crocker again and again tried to sell out. He couldn't. There were no buyers. When he went to Virginia to try to sell

stock to keep the wheels going round, he could not sell one share, no, not for a dime. Local counties and cities also helped enormously with backing of bonds. With the United States Treasury help and local help, the Central Pacific got in all by 1869 over forty-seven millions; but remember that when it began it had little behind it but the Federal backing of sixteen thousand dollars a mile for flats, thirty-two thousand for uplands, forty-eight thousand for the mountain sections, and lands on which it could not realize for years. Did the Big Four ever pay cash for their stock? Because books were destroyed, that question cannot be answered. The inferences are they did *not*. Did they in any way pledge their private fortunes to push the Central Pacific? There we are on the safe ground of facts. For ten years, over and over, every one of them gave all he owned as collateral security to endorse notes for the cash needed; and on these notes they paid ten to twelve per cent. It took some courage.

The most blasting discouragement up to 1864 was that they could not induce a banking house East or West to touch either Federal or state bonds. By 1864, first mortgage bonds could be sold for 75 and state bonds for 56. When you consider that interest on those bonds had to be paid — and was ultimately paid to the last dime — that discount was terrific. For every dollar the Central Pacific went in debt, it was realizing only fifty-six to seventy-five cents.

With such financial handicaps, why did the Big Four launch the Central Pacific? Why did Hopkins, the balance wheel and accountant, sanction such

financial suicide? Because — let us not shy at facts — they became their own contractors for construction and on construction accounts could profit. The accounts could be " padded " against their own rail company. That trick isn't unknown to-day and has wrecked every road that devised and used it, while it has left the contractors in some cases — as in one of the two sections making up Canada's Nationals — " stone broke "; in other cases — as on the Central Pacific — colossally rich.

Was that legitimate?

It is not so regarded to-day; but we are not measuring 1862–69 by the yardstick 1928. There was just the one problem in that period — how to get steel rails across those mountains.

To get local aid from municipalities, the Central Pacific was charged with " playing favorites." If such and such a county wouldn't " come across " with bonds, they would pass the chief town and establish a site of their own; " so," said one complainant, " they blackmailed us for $230,000 and got it." What the complainant might have added could he have foreseen was that the county and its suburban cities have a population of over a million to-day purely through rail connections; but the thing was vicious. It tossed a great national rail venture in the dirty vortex of civic elections. In San Francisco, for instance, Stanford's brother saw no evil during the election of 1863 of driving through the town and from a bag in his buggy scattering twenty-dollar and five-dollar gold pieces " near " polling booths. We

read of great feudal barons doing the same thing, which they called "largess," but democracy does not approve of "largess"; and it always brings its reckoning.

One could cite pages of this sort of thing from court records; but these are typical enough to explain why the Big Four got all the discredit and not much of the credit that was their due; and yet, going back to that Destiny using unconscious human tools with all their evil for higher ends — could the Central Pacific have been built without such types? Every transcontinental spanning the United States but two — the Santa Fé and the Great Northern — was marked by such episodes; and you will learn that the Santa Fé was not exactly a Sunday-school class with "canyon wars"; and Mr. Hill could checkmate rivals when they blocked his plans. There is hardly a writer on all California history who does not fall back on that theory of Destiny to explain the march of events: Old Mexico unable to hold Upper California just when adventurers from the outer world were pouring in; the Mexican Republic torn by revolutions just when Polk was ready to buy all California; the British government failing to back the Hudson's Bay Company's plans for expansion, just when American admirals happened to be in California ports when most needed; the gold rush bringing in a stampede of new population just when the old era of plenty from trade with the fur coasters had passed; then when the gold rush was over, and Nevada's silver rush coming, the Civil War literally forcing the building of a transcon-

tinental across a territory which did not seem to give the slightest promise of ever paying traffic returns. It was as if a Great Higher Hand beyond human control gave its tools a push and then they had to go forward, smash or not, of their own momentum. I don't suppose one of the Big Four, who pushed the Central Pacific through, ever had the slightest hope of the stock set aside for their reward ever giving them one dime of profit. Else they would not have tried so frantically to sell it for seven and ten cents on the dollar. Yet their heirs, who had to hang on because they couldn't get rid of it, and men like Harriman, who later bought it at from twenty to thirty cents on the dollar, lived to see that stock sell on its pure investment values at from one hundred and twenty-one to two hundred dollars and more.

And besides the inherent difficulties of financing the Central Pacific was just such furious rival opposition as the rails of the East had encountered from stage companies, from toll roads, from the Pacific Mail Steamship Company, with their prosperity and profits jeopardized by a project which they were positive could never succeed. Pages and pages of that fight have been told in court and out of court; but why repeat them? They, too, have gone down to the limbo of junk under the steam roller of progress.

At what price did the Central Pacific sell those lands, whose exact areas have been given elsewhere? At from two and a half to twenty dollars an acre — tall timber at five dollars, pine at ten. The cheap land was in what was called " the desert area," which

now sells as fruit land at from seven hundred and fifty to four thousand dollars an acre. Or else it was in oil areas; and there one hesitates to set down the modern value. It might make the Big Four turn over in their graves. It is one of the sardonic jokes of history. As to the timber values, there, as well, Destiny must smile. Some areas sold at ten dollars an acre for one hundred and sixty acre homesteads have since resold at twenty to thirty thousand dollars for the homestead. Surely we are far enough away to laugh at the pranks Fate sometimes plays; and never a prophet stellar or mundane uttered a peep of what was coming. We have cursed the rails for what they got in land grants. I have often wondered if they haven't cursed themselves more for what they let go. To me, the joke was not on the public. It was on the rails.

Now to consider the human side of the rank and file who battled with the elements to put the line through — there were snowbanks from thirty to a hundred feet deep to be scooped out in white tunnels before roadbed could be blasted for foundations. While these blockades held back the main armies of coolie navvies, the rest had to haul supplies up the canyons of Truckee River. Snowsheds here cost two millions in one winter for less than forty miles. In other words, the snowsheds alone on this division took fifty thousand of the eighty-eight thousand Judah had figured per mile. They took all the Federal Treasury grant. Rails cost ninety-one dollars a ton without transportation. Transportation across Pan-

ama brought costs to one hundred and forty-three dollars. Hay for the teaming cost one hundred dollars a ton. Potatoes to feed the crews were two and a half a bushel. Ties were cut from right of way but by the time they were hauled through such snow tunnels, they had cost six dollars apiece; and once poor Huntington nearly had apoplexy on a tour of inspection above timber line. The cold had been so bitter, his workmen were using up twenty-five ties a night at each camp to keep warm. All through 1867, fourteen thousand men were at work at an average of thirty-five dollars a month and, though it was cheap "coolie" labor, it is a question if cheap coolie labor at this price was as cheap as the soldier labor at work on the Union Pacific at twice the cost. At first, Crocker, who was chief contractor, received in payment five-eighths cash, one-fourth bonds, one-eighth stock. There was "a big row" — as Judah testified — over those first contracts. Whether Crocker was dividing profits with the others of the Big Four, which he might have done at sixteen thousand dollars a mile for flats, or whether he saw ruin ahead when he reached the mountain sections — we don't know. He certainly made a terrible kick to be paid monthly. He couldn't sell his stock for thirty cents and from 1867, the Big Four became their own contractors under a subsidiary company. Of course, the four merchants who were the same men as the Big Four stockholders and construction company, could sell supplies to the construction company, which could charge them against the Central Pacific.

Did the four merchants pile on prices here, the construction company "pad accounts" charged and loaded finally on the Central Pacific's back? Again — these records were destroyed! We don't know. Human nature would not have been human nature if they hadn't. We know they did not pay a cent of subscriptions in cash to the construction company. They gave their notes and discounted their notes with their private property as security. This yielded cash to go ahead. Whether it was Hopkins, the quiet man of the Big Four, or Crocker, who took a hurried trip to Europe, or an absconding secretary who "lost" the account books, we do not know. We do know they were "lost," and lost account books in such cases have an ugly look. All we know is — the Big Four seemed to get stock worthless at the time without cash subscriptions; but — and please emphasize the *but* — the Federal Government got back its loan in full. Of course, the loan repaid came out of traffic receipts and the traffic charges were high and the public paid. Did the public get back returns commensurate in freight service and in increased values along the line? I don't know. All I know is — the Central Pacific got itself built and justified all the Federal government had advanced. Also the Central Pacific at its very worst never became the football of stock gamblers like the Erie. That may have been because it seemed too risky for stock gamblers.

How about the service in the early days? Better than the coaching days but nothing to boast of, not to be compared with the old Erie. The ballast was

so poor, the grade so steep, the engine power so weak that in wet weather — as Daggett says — the rails slipped like "wet soap." The speed was nineteen miles an hour compared to the Erie's mile a minute. Cars were heated by stoves with wood for fuel, but passengers were expected to carry their food or hop for their meals to eating houses while the engine got a drink. It was all very primitive up to 1874, but I have traveled on worse roads in 1924, where there were not any eating houses to hop to and you sucked a lemon for drink because you didn't want to increase thirst by drinking alkali water.

The "grabbing of the waterfront" at Oakland is too long a story to be told here. It gave the Central Pacific a monopoly of the waterfront for many years; and a monopoly never yet helped any rail in the United States as much as it hurt itself. It subjects the holder to every shift and veer of political winds, and throws it in the vortex of dirty politics; but the granting of that waterfront in return for traffic benefits expected was really only the deferred result of San Francisco refusing to back the Central Pacific when the Sacramento men did. This monopoly, too, is a thing of the past; but the ill will created is an evil heritage. Feeders of the main line had been pushed up the Sacramento Valley to Oregon — this by consolidation; but the area attracting Huntington's sharp eye was not the Middle Belt — which national aid had compelled both the Union Pacific and the Central Pacific to cross. It was the shorter route from the Gulf of Mexico across to the San Diego

section of the Pacific. A line would undoubtedly pay from San Francisco down to Los Angeles in spite of steamer competition. So would a line from Los Angeles to San Diego; but from San Diego across the desert to Texas — would that pay? Los Angeles had a population of five thousand people by 1870, San Diego had twenty-five hundred; and there was the ranch traffic between to be gathered up. Huntington and Stanford got these little independent lines known as the California Pacific again by consolidation. Was the consolidation fair to the little line? Suits dragged on in courts for years; but the main point is that the little independents could not pay interest on debts and so came into the Central Pacific's net. This was really the beginning of the Southern Pacific Railway system. The Southern Pacific had been chartered in 1861, and Congress had given it the usual rich land endowment. Then all the little lines south came under the general name Southern Pacific in 1870. Construction had to go ahead as far as the Colorado River to earn the land grants. Again the same system of subordinate construction companies did the work and again there was no disentangling of the books of the rail company from the building company. Certain town sites along this new rail line to the number of thirty fell as bonanzas to the new line, through its building partners, which were to all practical purposes the same as the rail line. It is known that the Central Pacific acted as the bank to advance cash for both the Southern Pacific and the building contractors. Their pay cars were often identical.

When Hopkins died in 1878, he left an estate of nineteen millions. When Crocker died in 1889, his fortune was appraised at twenty-four millions. Certainly those fortunes were not acquired as merchants in Sacramento. Nor could they have been acquired up to 1889 in Central Pacific investments. Central Pacific was too costly a construction business to have left such profits. The only inference is that the profits must have come from the construction contracts of the Southern Pacific, which was infinitely cheaper work than the Central Pacific across the Sierras. In all up to 1888, the Southern Pacific had absorbed eighteen lines as far as the Colorado, built by the same system through more or less the same construction companies. It was this sense of a line loaded to the limit by its builders with cost charges and then passed into the hands of a monopoly, which in California for a quarter century aroused such furious antagonism to the Central Pacific and its foster child, the Southern Pacific.

Rivals forced Huntington's hand. The rivals were what is now known as the Santa Fé and lines from Missouri to Texas, which Jay Gould was beginning to shepherd in the first really constructive rail work of his hectic life. Gould had been offered a share in the Southern Pacific. It was bonded for forty thousand dollars a mile. Gould figured it shouldn't have cost more than twenty-five thousand dollars; so he demanded stock thrown in with bonds to balance the profits which the builders must have made.

The Central Pacific now covered in a network

from San Francisco north to Oregon, from San Francisco east to Utah, from San Francisco south to the Mojave, and east to the Colorado. On the death of Hopkins and Crocker, blocks of Central Pacific began to go into the hands of the general public. Large blocks were sold in Great Britain and Holland at fifty to fifty-six dollars a share — a slight rise in twenty years from seven and thirteen dollars. The Big Four and their heirs no longer controlled a majority of the stock. Huntington and Stanford seemed to have been shifting their holdings over from the Central Pacific to the Southern Pacific. Why? Need even a child ask the question? Because the building of many extensions then known as the Southern Pacific had been shifted over through the construction companies to the pay car of Central Pacific. On father's back rested the burden of son's extended business. Also — look at your map! Which line — father's or son's — Central Pacific or Southern Pacific — seemed likely to get the most pay traffic? The shortest route between the two tidewaters — the Pacific and Gulf of Mexico? Yet control of son's pay business was in father's hands — Huntington and Stanford. If father was not a sly fox, he at least was not a dull one. Jay Gould could hardly have beaten the moves on the rail checkerboard. To complete the game, a distinct Southern Pacific was organized in 1884 in Kentucky with a charter empowering it to do anything under the sun to run a road from the Pacific to New Orleans and with a capital of one hundred million dollars to take over the certificates of the old Southern Pacific shares.

It was an amazing charter. It leased the old road for ninety-nine years. It leased the Central Pacific for ninety-nine years and took over all its debts except the great principal indebtedness to the government.

Again one of the grim jokes in rail history. Who could foresee that in four more years the Interstate Commerce Commission would be born to take a hand in unscrambling Huntington's eggs? Still less, who could foresee that a poor clergyman crossing Panama in the great gold rush that drew Huntington to the Pacific had an infant son who would take in his hand both the Central Pacific and the Union Pacific and put them on a paying basis and then add to these twin lines that very Southern Pacific which had slipped from beneath its own load? That son's name was E. H. Harriman, with only one slip to his discredit, one of the greatest rail geniuses the world had ever produced.

It is hard to pass a fair verdict on the Big Four by the ethical standards of to-day. Look at their faces, especially the old tintypes of the frontier, which did not flatter as do portraits painted at a later day. They were not evil faces. They were not the porcine jowled types of the shyster rings who plundered the Erie with less compunction than a hog cleans up its feed trough. They were not the fox face of a Drew, nor the gentlemanly face of a Gould. They were big men physically and mentally, hard physically and mentally as nails in business but kind, generous, colossally generous and public-spirited in gifts to the state which had given them their prosperity. One of the

greatest museums in the world stands to the honor of Huntington, one of the greatest universities in the world to the honor of Stanford. Yet both men had grown up unschooled except by hard knocks. They had gone through the gold rush and had not made money. The money they first made was by the thrifty hard route over the counter in daily sales. They had earnest faces, glances that bored through every man they looked in the eye and their eye never batted a glance. Each seemed animated by almost terrible driving power. It was a demon. They were relentless in pursuit of their aim, ruthless in their methods, bull-headed and tactless in their handling of the public, and, let us add, they were openly and frankly unscrupulous in ways and means to their end. But over against that indictment stands the fact that they were builders — builders of everything they touched. Not one had a vicious fad. All had great love of fast horses; but who on the frontier hadn't in those days? As for ethics, it is a toss-up if any one of the four knew the meaning of the word, especially ethics in business. For then there were no ethics in business except in the vernacular "to get there." The very systems which built up their properties pulled those properties down. Perhaps it is a good thing they died before that happened. They wouldn't have been able to understand it. They could not have adjusted themselves with platitudes and unctuous cunning to a new order. Perhaps the fairest verdict is simply that, like the old fur traders who preceded them, they were the last great outstanding figures of a feudalism that had

grown up and existed in a pure democracy. It was doomed to go; but it did its work before it passed; and as the little girl says in the fairy story — There you are! What can you make of it?

Life does not deal with theories. It deals with facts.

Chapter XXIII
Mutterings And Rumblings Of The Coming Storm. 1860–1873

THE wisest of the world's teachers reproached the writers and lawyers of his day because, though they could read the signs of the weather, they failed utterly to read the signs of their own times. They failed because they didn't want to read them. They did not dare face the omens of bad signs. Sunspots, they could see. Sunspots on the glare of prosperity in which they basked, they *would* not see.

Something of this sort now comes in the record of rails' progress Westward belting the continent. There were sunspots. There were mutterings and rumblings; but none so heedless as eyes that *will* not see and ears that *will* not hear!

The land frauds that followed the land grants to rails were colossal. One could pick them out from the Canadian boundary to the Mexican border in millions of acres and thousands of miles of steel rails. Charters for rails were obtained *not* because the new highway was needed but because promoters hoped and perhaps persuaded themselves they could sell those lands, received at no cost to themselves, to an inrush of settlers at greatly advanced prices, or sell the rail stocks or bonds on these land grants to a public mad with a speculative mania, then retire with profits, and leave buyers of lands and securities to sink or swim, struggle or strangle.

"In an evil hour Stephen Douglas advocated land grants."

"The little finger of monopoly has become thicker than the loin of the law."

"Farmers are cruelly oppressed . . . our courts are debauched . . . our judges are bribed . . . the public pays the profits on floods of worthless stock . . . the law of the land is defied. . . . The people have paid for the rails in rates and land, and the stock holders get the profit . . . if a man steals from me enough to buy him a horse and then charges $5 for carrying me a mile, he does on a small scale what subsidized capital does on a large scale."

I could go on quoting a hundred such charges after the Crimean War, when the price of wheat soared to the sky at three dollars a bushel for any grade and then from the late sixties when prices as suddenly fell, shot down to forty and thirty cents a bushel. Political platforms rang with such charges. The press featured them; and one of the quotations cited is from a judge.

Land grants were forced by the necessity of the period in natural growth. No one denied that; but what the antagonist to the system demanded belligerently was — did that excuse the evils which flourished under the system? Here was a rail that could *not* go ahead without land grants. It got them — millions of acres. It either sold them or used them as collateral security for bonds to go ahead and build. All right so far. The shipper was willing to pay rates to yield interest pledged on those bonds. He knew all about that. The bond was simply a long-time mort-

gage at a lower rate of interest than the farmer could get. He knew all about that from his own farm mortgage, which hounded him to desperation when prices fell or crops failed; but how about millions of dollars in common stock issued to the directors for which in many cases not a dime had been paid? Aye, there's the rub — said these desperate farmers like Hamlet, when they witnessed all their hopes blighted by hard times: Should we pay rates to yield dividends on that? It was " watered stock " in the worst sense of the words. It was worse. It was slime doped with falsehoods to go down the investors' throats; and to the farmers' antagonism was added the fury of the befooled and cheated investor. Such outrageous antics as characterized the Erie's gyrations, though it was not a land grant road, shook the public faith in all rail promoters. No distinction was made between the Big Four of the Central Pacific pledging their all to get a road through and then paying themselves with " watered stock " which they could not sell, from Jay Gould and Drew issuing " watered stock " in buckets and then playing the market for profits. The searchlight of blazing anger focused on the successes of manipulators and then scorched the real builders, who had to take losses or weather storms in hard times.

Other factors now stand out clear which still farther embittered the farmer. The Crimean War sent grain prices sky high. I have a great-uncle who came from Scotland in this era with a large family of boys, bought all the land on which he could lay hands and

sold grain at three dollars a bushel throughout that war. He had the vision to foresee the storm brewing between North and South and straight through the Civil War his younger sons were held to the farm. He repeated his signal successes, to retire on the close of that war a very rich man; but many farmers had not that foresight. Neither had they a large family of growing boys. When prices collapsed after the Crimean War, they were caught in the fall of all farm values. There was a minor panic in 1857, which, as far as discontent in the Middle West was concerned, was immediately relieved by the outbreak of the Civil War, which again sent farm prices and farm values soaring. Looking up old Ohio state records, it is almost laughable to read the dolorous predictions of overproduction presaging total ruin to farmers. That total was less than a tenth of what we produce to-day. Why, that Cassandra of ruin cried aloud to high heaven, there are not enough people on earth to eat that awful quantity of wheat. This grain prophet was the greatest authority on grain in the Middle West from 1856 to 1860. The world to-day eats four billion bushels of wheat. The total production of the United States at that time was less than one hundred million bushels. The Civil War dispelled and disproved such false prophecies. Again the farmer basked in a false prosperity, perhaps a fool's paradise; for the discarded soldiers of that war flocked to the low-priced lands and again sent land prices up from a dollar and a quarter and two and a half an acre to fifteen and thirty dollars. It seemed such easy money,

it was almost dropping out of the skies. Also the enormous rail expansion from 1864 to 1873 gave farmers big pay as teamsters as well as sellers of farm stuffs; but what about it when prices for farm stuffs suddenly again slumped, and land could not be sold at any price, and debts in greenbacks had to be paid in gold and interest on those debts in gold? Then began the mutterings and the rumblings and the ominous clouds that crashed in the storm of 1873.

It was really in this era the Granger movement or Farm party under its various protean names was born. In this same era there framed gradually in men's minds the need for a Federal commission to deal with all relations between shipper and rail, which we to-day know as the Interstate Commerce Commission.

When times were exuberantly prosperous, why shouldn't the rails reduce rates? When times were hard, the rails must reduce rates. When there were no dividends to investors — well, that was their funeral. When there were big dividends, there they were at it again — taking the hog share from the shipper. Such was the burden of complaint that fermented and fomented till it boiled up in demands that politicians could not ignore.

Padded pay rolls for construction companies; rails so badly laid on shoddily built roadbed that replacement doubled costs and bankrupted many a road; absentee ownership by European bondholders and New York shareholders, who could not understand the West's real need of patience for recuperation and tossed shares and bonds on a falling market; rebates

to big shippers, unfair deals to little fellows; rates slashed to ruinous level one year and pushed up without warning the next — gave the farmer a sense of being sucked in a maelstrom of ruin over which he had no control. Go a little deeper in detail — owing to the desperate scarcity of real hard cash after the Crimean War, contractors on grading now often took in payment one-quarter cash, one-half or quarter bonds, the balance in stock. The cash paid the laborers' wages. The bonds could be used to borrow at banks. The stock could also be so used. The bonds represented at least the value of a mortgage for the bank. What did the stock represent? Quien sabe? Can the wisest mind on finance answer? But the evils came out of this system like a Pandora box. Temporary hard times, such as followed the slump in prices after the Crimean War, came on; and it was perfectly natural that some of the rail contractors, pressed for ready money or nervous over falling values, should sell their bonds rashly, in a panic, on a sliding market. With an enormous slam of bonds on a falling market, the bonds of even good roads went to bottom like a stone in a pool. During this temporary derangement following the Crimean War, good sound bonds went to 49, 28, even to 12. Why in the world did sane people throw sound values to the winds in this fashion? Need of ready money, first. Next, when foreign investors saw American investors tossing American securities to the junk heap, they took fright and tossed their own to the same discard. In this era many of the sound roads, like the Illinois Central, the Chicago

and North-Western, the Chicago, Burlington and Quincy, the Chicago, Milwaukee and St. Paul, picked up the bonds at slaughter prices, enabling them later to piece together many little roads in big systems. Land grants can hardly be blamed for this. It is rather additional evidence that no system is fool-proof.

Let us back to the question — did the founders of these first land grant roads not put a dime of their own money in the new venture? I do not know of a single case in the real transcontinental, as distinguished from the purely fraudulent promoters' roads, where they did not pledge all their fortunes, all their friends' fortunes and often risk the fortune of the fiduciary institutions with which they were connected. It was risky — it was tragically risky. The law of the land did not forbid such practices at the time, but common prudence did. Unfortunately, few people can maintain the common prudence of a steady head when the bayonet of necessity or of fear is prodding. If their judgment had been at fault, they would have pulled down not only their own house, but a dozen financial houses, as the Jay Cooke smash later did. Take the Canadian Pacific as one of the soundest roads ever financed. Here Lord Mount Stephen, then George Stephen, the owner of a big department store and a director of the Bank of Montreal, and Lord Strathcona, then Donald Smith, a Hudson's Bay Company man in charge of the pension fund — were the master minds. George Stephen pledged all his own credit and all the credit he could force from the Bank of Montreal. Smith pledged all his own savings

and certainly such portion of the Hudson's Bay Company's retiring fund as he had the liberty to invest. Risky — terribly risky, we whisper beneath our breaths; but when our great fiduciary institutions to-day — life insurance, fire insurance, investment trusts, colleges, and religious endowments — do the very same things in rail bonds and stocks, of which they are the biggest investors, aren't we taking the same risk? They buy at low when the public loses its head. Then they hold or sell at high according to earnings on their investment. The safety of such a policy depends on the good judgment of the man behind it; and such men base their judgment on permanent earnings, not promoters' and manipulators' quick profits. The chasm between those classes is as wide as the abyss between Lazarus' heaven and Dives' hell.

You recall how the Biddle banks tied up in the panic of 1837–39 with lesser banks to pull rail construction through in the South. The Georgia and Virginia roads pulled through, as the Canadian road did; but what if they hadn't? Doesn't it really boil down to the moral integrity and good judgment and close management of — the man?

Or take one of the oftenest cited cases in all raildom — that of Collis P. Huntington. He and his associates pledged all they owned in the Central Pacific that did plunge deep in the gutter of a slimy financial-political era. Huntington was being reproached by the bankers. Certain political features were becoming what is colloquially called, when it

escapes from hermetically sealed secrecy, " a stench." Bankers and backers were threatening Huntington, not with exposure — Heaven forbid! That was the last thing on earth they wanted — but with pressure. Now, Huntington was a big man physically. He had a big temper and he had a big voice and he was rasped. Tradition has it that Huntington whirled on them in a tempest: " Here, take them," he stormed — (" them " referring to lands, bonds, whatever could be sold to raise money) — " if you can sell them, you can do more than I can — and you're welcome to them — go ahead." They didn't go ahead. They left Huntington to go ahead as best he could; and his best was in spots pretty bad.

Granted that such men behind land grant roads did take common stock in inordinate amounts to themselves for their first advances of a few hundred thousands or a few millions. At the time the common stock was not worth a dime. When it became worth one hundred dollars par, one hundred fifty, two hundred, should the increment above par be taken from them? Taken from them in reduced rates or reduced dividends? And if taken from them, should the increased values added to the lands along the rails, to the buildings which have grown on raw prairie into great cities, also be taken from the people who bought that land for the price of a turkey, or a horse, or a bag of missionary flour? Draw a line from Winnipeg to Vancouver, from St. Paul to Seattle, from Chicago to San Francisco, from St. Louis to Los Angeles. Then look up the probate

court records on the fortunes left by many rail founders between 1850 and 1900. It is easy. Most of the big fellows passed to their final assize between the eighties and 1900 with a blare of nauseating wealth-worship that left nothing untold and much exaggerated. Put those fortunes down in a column. In a parallel column, indicate the fortunes left by factory founders in those same new rail centers, by bankers, by lumbermen — who could now get their stuff out to market, by coal operators, oil magnates, packers, implement makers, holders of strategic lands in great centers like Chicago. Total the lists. It will be one of the most illuminating shocks you ever got in your life.

Because the very best minds of the period — Lincoln, Douglas, Webster — had advocated land grants, when the census of 1870 was taken, the marshals of the census were instructed to gather facts to show whether these land grant roads were helping the sections for which they had been designated; and I cannot believe that their report was what one would now call doped.

Here in brief is what they set down:

"So great are the benefits [of rails in these sections] that if the entire cost of railroads between the Atlantic and Western States had been levied on the farms of the Central West, their proprietors could have paid it and been immensely the gainers."

The trouble was, the farmers had not the money to pay the levies to build the roads. Output of all grains

in Ohio, Indiana, Illinois, Michigan, Wisconsin — the two latter Lake states — had doubled. Prices had *almost* doubled, and in cases quadrupled. The *almost* is qualified because corn was fed to cattle and hogs and both sent out on hoof or as meat; so corn can be tabulated as wheat; but the price went up from twelve cents a bushel in 1826 to forty-eight cents in 1870. Land prices had gone up from a dollar and a quarter an acre in remote sections to eleven dollars an acre — which was as much as one hundred dollars an acre in money value to-day. In Ohio, the cash value of farms had increased double in ten years, in Illinois almost quadruple, in Indiana triple, in Michigan triple, in Wisconsin four times over. " It is not too much to say," added the marshals' report, " half this increase has been caused by railroads." Then the marshals equally honest in their findings point out that the gain in these sections had been balanced by losses not yet visible in 1870, but sure to show up in the next census of 1880. The thing is so pathetic, I should like to go back and pat those old marshals on the back. It was a prophecy of a double tragedy just coming up over the horizon of the bright future.

Producing was so easy and prolific on the rich soil of the Middle West, it would lead to a terrible decrease in farm values East. It did. The East suffers from it yet.

Wealth had come so suddenly and so easily to the Middle West, many farmers had overexpanded their holdings of land and stock. They had plunged headlong in debt. If prices fell suddenly, they would be

ruined. They were. It was part of the crash of '73. It was part of our own crash after the Great War.

So history still going on in its upward spiral — here a dip, there a rise — from the beginning has repeated itself, because down deep beneath all history are eternal laws, but the mutterings and rumblings and ominous clouds on the horizon were only too accurate omens of the worst financial crash the United States had known till 1873. We have a fashion of saying history does not repeat itself. That may or may not be true; but certain laws of life do hold true for all eternity; and the rail world was about to collide with some of those laws with disastrous results, which become evident in the story of the next two great transcontinentals.

Chapter XXIV
Along The Old Santa Fé Trail. 1820–1893

IN my cabinet of Western curios is an old tobacco pouch exquisitely decorated with beads by some Indian woman of a New Mexican tribe. It was once the possession of that doughty old general and governor, who played such an important rôle in New Mexican affairs both before and after New Mexico became part of American territory — Armijo. It is fragrant with memories of more than the old chap's favorite tobacco; for after having run the gauntlet of raiding Comanches, Kowas, Apaches, Pawnees, across the Great American Desert and reached the end of the long trail from the Missouri to Santa Fé, many an American caravan of traders had to pay the old fellow's arbitrary tax of five hundred dollars a wagon before a pound of merchandise could be unloaded. It was lose all or pay; so the Americans squirmed and paid. The freight had already cost them two cents a pound, or as much as it would now cost to ship a ton of the same freight all the way from Chicago. The trip took one to two months. This same distance can now be traversed in forty-eight hours.

Above my cabinet hangs an old cross inlaid with mother of pearl to mark the stations of the procession held every spring along the winding narrow crooked streets of Santa Fé, in which the Spanish people of New Mexico yet commemorate the great De Vargas victory over the rebelling Pueblo Indians in the late 1600's. No help could come from Old Mexico;

so De Vargas vowed that if the powers of Heaven would come to the rescue, the procession would yearly render thanks to God forever.

Sitting amid a hum of bees under the peach and apple bloom in that delightful old garden of the great French archbishop — Lamy — sent out to act as a more independent umpire of disputes between his Spanish flock and the new American government than the former purely Mexican priesthood had proved, I listened to tales of that old Santa Fé Trail that come down almost to our own day.

Stephen B. Elkins, in the early sixties, had tried his hand at mining in New Mexico; but how to send his "poke" of gold dust and nuggets out, when Americans' caravans subject to raid of Indians and such outlaw brigands as made the Kansas section of the Santa Fé Trail a horror? A not unusual custom was to put the precious gold in the broad leather belt of some trustworthy traveler and then decorate the belt with as many pistols as a penitente's spiked nails. Elkins thought that only invited attack. He tried another plan. A fine old Indian woman was taking her children out to be educated in St. Louis, and to her he entrusted his "poke" of gold. The stage was held up by bandits. The old "squaw" was not molested, though all the passengers were ordered "hands up" while the outlaws searched their persons. The Indian woman had taken no chances. She had put the gold in her pemmican buckskin bag smelling to high heaven in the hot sun on the blazing stage roof. The pemmican bag she had half thrust in a dirty sack. Every soul

in the stagecoach was rifled to a dime. All carpetbags in the pouch below the floor and on the roof were ripped and emptied; but the bandits kicked the stinking pemmican bag aside; and Elkins got his gold out. The story was related to me by one of the descendants of those children educated in St. Louis.

Such was stage travel in " the good old days " on the Santa Fé Trail. I have traveled that trail many times in the same blazing heat behind steam's flag along the steel rail, and what with electric fans, heavy blinds on open car windows, screens to exclude dust, and oil burners in the engine, I have not known it was either dusty or hot.

Another time, on a different railroad — the Southern Pacific — I was anxious to see an ancient ruin just on the border of Old Mexico. It was before the days of motor roads to ruins. As I wanted to make the trip out and back — ninety miles — in a day, I picked the fastest team I could find, which was owned by a Mexican. The revolution was at its height in Mexico, and I was not particularly anxious to be on a border trail after dark. The trip out was picturesque — fantastically picturesque through the sagebrush and cactus along arroyo beds dry as flour, with my little Mexican telling me hair-raising revolutionary tales. All went well going out. I was thinking there was a lot to be said in favor of " the old days " without speed and noise and turmoil. Perhaps the horses were fagged and traveled more slowly coming back. Perhaps we lingered at the old ruins listening to the keeper's explanation of the ancient civilization. Any-

way, coming back, darkness fell with the suddenness it always curtains the Desert; and as it fell, there came one of those terrific cloudbursts that turn dry stream beds into raging torrents and fill depressions with boiling tempests of muddy slime. The driver simply slackened the reins over the dashboard and gave the little horses their head. As he said — the ponies would find the way by " feel," whereas if we tried to guide them by my flashlight on the trail now inches deep in mire, we'd only bump into piñone trees or bog the horses wading the raging arroyos. He was right. They got us back to the little cow-town, but it was two in the morning instead of early evening as we had planned. The whole ranch population had been marooned in the town. I got a bed by taking my turn of eight hours and slept in my muddy boots and ulster coat lest the delayed train should come hooting along making up time. It didn't. The rails had been washed out; and the midnight express didn't get across the gap till four the next afternoon; and I had to wade to the station over planks in boot-high slime. My diet for the night and day was coffee and soda crackers; first, because the marooned people had cleaned out the restaurant supplies; second, because if you are an experienced traveler in the wilds you will learn the first law of health — travel with a tightly reefed-in belt rather than eat poor food or drink flood waters.

Anyway, I had somewhat changed my mind about travel " in the good old days." I preferred to take those " good old days " in retrospect. I looked more

like a water rat than a respectable tourist as I climbed into the pullman, but I changed in the wash room for city garb and made a frantic dive for the dining car. In another twenty-four hours I was in one of the best hotels on the Pacific Coast. " It used to take us thirty to fifty days to drive our sheep across the desert to the markets of Los Angeles and San Francisco," my informant had told me as we sat in the peach gardens of the archbishop at Santa Fé; but what I wondered as I thought back was — What had taken rails across this Southern desert? The Union Pacific and the Central Pacific had been built as strategic national measures backed by the United States Treasury; but why the Southern Pacific? Why the Santa Fé? No one had yet dreamed of the citrus fruits which to-day make up such a big total of Southern freight. Much less had any dreamer foreseen the great gush of oil adding to traffic. The great discoveries of precious metals in Colorado had not yet taken place to stampede another mining rush across the desert. Indians practiced irrigation; but there was not a white man living who had guessed or would have believed that irrigation would yet transform this desert into a garden.

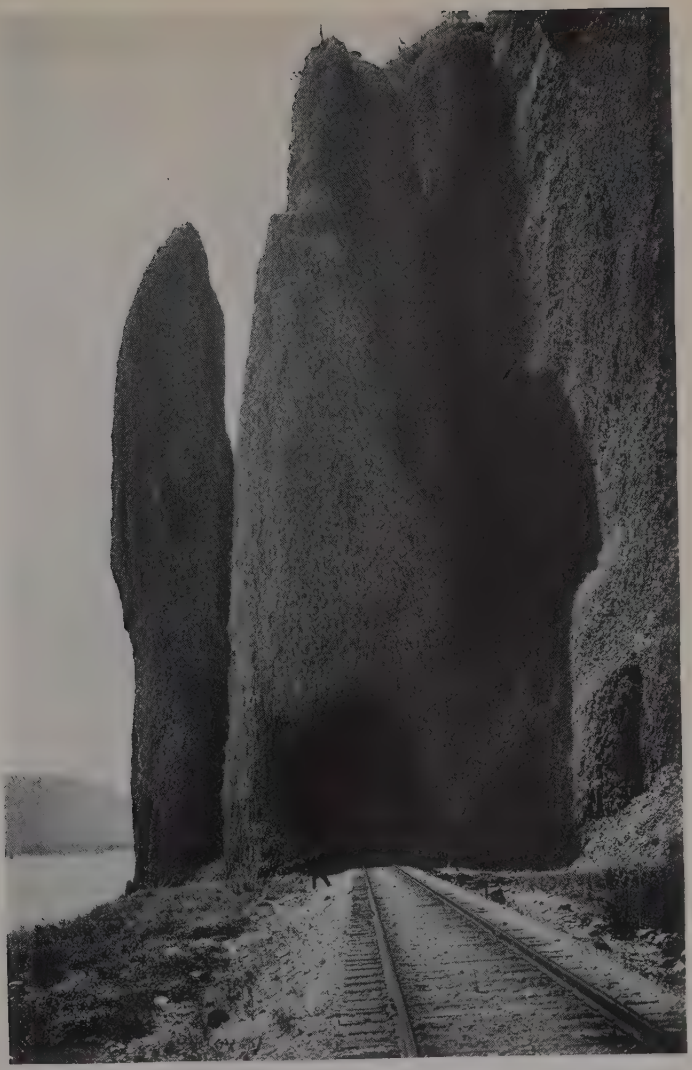
Emerson says something to the effect that every great institution is the enlarged figure of a great man in the past, a man who had vision and the faith in his vision to go ahead and *stick* through thick and thin.

Such a man was Cyrus K. Holliday, the Father of the Santa Fé. Like Jay Gould, he was a Down East man born in 1826, ten years before Gould. It was Gould's ill fortune to have burned out his life before

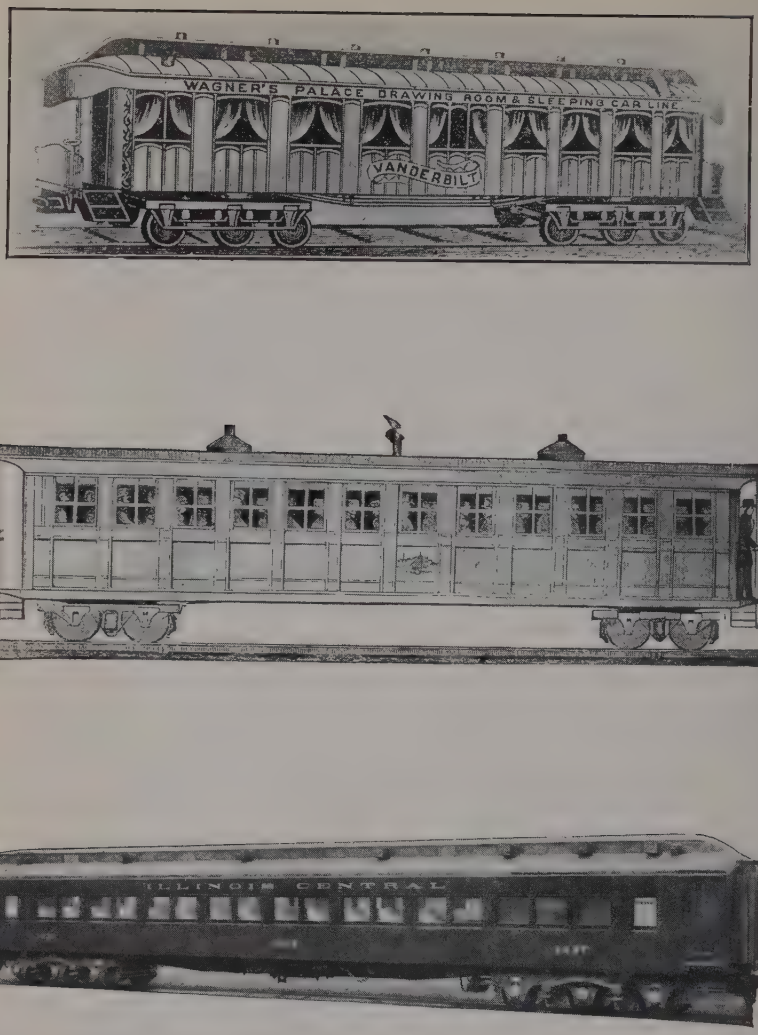
he reached a constructive stage. It was Holliday's good fortune that his life always stood for constructive forces and that he lived to see his dreams come true, though for ten years the people he was to benefit most called him in their rough Western vernacular "that blank old fool." Holliday came from Carlisle, Pennsylvania. He studied law and succeeded in putting across a railroad charter which netted him a profit of twenty thousand dollars; but, like Gould, he had the vision to foresee that it was the lure of traffic from the West that was drawing the New York Central and the Erie to the Great Lakes and the Ohio. Why not strike with his little stake for the real Far West? So he headed for the jumping-off place to the No Man's Land — now Kansas. That took some nerve and daring; for Kansas was passing through all the throes of roughscuff fights between the free state party and the slave partisans backed by such bandits as later perpetrated the awful Lawrence Massacre. The overland rush still persisted to Oregon and California; and the opening of the Southwest after the Mexican War sent population jumping from five thousand Americans in 1850 to eighty thousand by 1860; but the two essential factors that drew Holliday to Kansas were the two that are basically below all permanent rail prosperity — the shortest distance to tidewater and perennial, not transient, traffic. The Union-Central Pacific systems struck across the broadest land belt for national reasons — the middle of the Western States. As you go farther south, the distance to the Pacific or to the Gulf is shorter

because the continent is shaped like a great pear — narrowing towards the bottom. Mines may yield a boom traffic but it passes as the veins peter out. Traffic from good farm lands lasts forever; but that rails rather than a land boom were in the back of his head you can infer from his own words, when he picked Topeka as the future capital of Kansas. Topeka was the Indian word for " good place to dig potatoes." Soil that will grow good potatoes will grow pretty nearly anything else in an equable climate; but Holliday's words are: " The selection of this location for a great city was not an accident. Here were a great river, plenty of water, above all the two great trails — to Santa Fé and to California — crossed at this point." Holliday was sure a great city must grow there and he staked his entire fortune on his judgment and no doubt added to his capital by becoming the head of the first land site company; but he was playing for a still larger stake — a long, hard pull — not the immediate Wall Street profits of the impatient lightning-quick Jay Gould.

The rail charter of what we now know as the Santa Fé, Holliday got in 1859; but the land grants did not come till five years later and were of no help. The railway had the land, but no cash. Not a New York capitalist would touch the road with tongs; for the Santa Fé had no Federal Treasury behind its bonds, like the Central and Union Pacific. What traffic could it possibly get? Buffalo bones. It would " create traffic," Holliday affirmed, by bringing settlers. Settlers? New York bankers laughed. Not till the Mid-



Tunnels of this sort obviate sharp curves on the modern railroads. Watchmen patrol every foot of the tunnel while the light signal indicates a clear way ahead.



From crude and ugly beginnings there has been a steady tendency toward simplicity, efficiency and beauty in the development of the modern railroad coach. This progress is sufficiently evident in these three pictures.

dle West was settled; and they were not lending money on eternity. They were lending on time. "You are going ahead of needs by a century, man," they told the enthusiastic young Holliday. "You can't hope to pay a dividend for many years. We daren't risk it."

Of course, the Civil War engulfed his hopes; but on the wall of his little frontier law office hung a map with mystic lines drawn from Atchison to Topeka and Topeka to Denver and California and Old Mexico. All who saw it laughed. They had to admit he was a fine successful business man but he was plainly queer on one hobby — steel rails. Holliday recalled what rails had done for Boston and New York and Philadelphia and, when the end of the Civil War sent disbanded soldiers pellmell into Kansas and the Southwest, no doubt conned over that old adage — He laughs best who laughs last. Nothing ever shook his faith one jot from 1868, when the first spade of earth was turned, to 1900, when he died in opulence and the full realization of all his dreams.

But his dreams did not come true by lying back and folding his hands and turning on the force pump of an abundant faith without effort to make his faith a fact. They did not. Con that well and follow the story. It explains why leaders always tower so immeasurably above followers and trailers and sideliners and vultures on the path of progress.

Holliday had to get more money for a beginning than he or his friends in Topeka could raise; so he set out to get support for county bonds by house-to-

house canvass, just as Philadelphia citizens had gone from house to house to launch the great Pennsylvania Railroad. He got bonds up to twenty-five thousand dollars guaranteed, and with that guarantee hied him to Cincinnati. Now there were peculiar reasons why Cincinnati might take a long chance on new transportation ventures. River traffic had jumped Cincinnati from mud flats to a town. Rail traffic had forced it to the status of a city — and all in less than twenty-five years. A Cincinnati firm from which Dodge City takes its name undertook to sell those bonds and sent T. J. Peter to look over this Kansas proposition. Peter became a whirlwind of enthusiasm for Kansas rails. Westward Ho! But there was a risk even in this Cincinnati firm's undertaking. It was to sell securities as fast as possible. That meant the control of the road might get out of the founders' hands. It almost meant that in hard times the securities might fall so low as to shake confidence in the road. Both these risks did come back on the Santa Fé in 1873 and 1893.

Let it be put down here beside the slim sale of bonds, each of the first thirteen founders put up four thousand dollars cash of the million and a half capital specified by the first charter. This sounds ridiculous in view of the Santa Fé's present assets; but you must keep in mind that if you have only twenty thousand dollars in all the world, one-fifth of it in a venture that could not possibly pay a dividend for ten years is a large gamble. As the line expanded from five miles to twelve and twelve to sixty-nine and sixty-nine to four hundred, little towns guaranteeing more bonds

made possible construction without padding construction accounts by payment of bonds and stock to the contractors.

Here is shown Cyrus Holliday's great superiority as a rail man over Jay Gould, who had now transferred his activities to the Southwestern field. Holliday had the most uncanny prescience in picking for himself fine associates, just as Jay Gould had the uncanny misfortune to draw to himself either scamps or incompetents. Peter neither smoked nor drank, but it is pretty well acknowledged he could swear in every language known. His manners might have given Jay Gould or Daniel Drew apoplexy; but he was dynamic, not static; direct, not furtive; and he may have blown off steam and nerve in hot words where Jay Gould took to flowers and literature for rest and the Wall Street gamble in securities for quick profits as vent for his tremendous driving power. As for pious old Drew, Jay's evil genius, pious platitudes, quids of tobacco, and marked dice which disturbed not his conscience a whit — seemed his tragic and only safety valves. Robinson, the Santa Fé's early construction engineer; Strong, a later president; Ripley, one of the latest presidents — every one was a self-made man from shirt-sleeves up, and more than that, without a peer in his own field. Compare these to the associates whom Gould had forced on him or chose rashly in his haste for quick profits; and you have largely the key to the success of one and the failure of the other. It goes right back to the one factor — the man at the pilot wheel of the system.

Only some twenty Topeka citizens came out to see the first spadeful of earth turned in November, 1868, from which the great Santa Fé was to grow. Holliday mounted the pile of earth and predicted the railroad would reach Santa Fé. The little group giggled. That was really too much — across an arid desert to Santa Fé. When the grading did get out five miles, and Holliday predicted the " dinky little streak of rusty steel " would go beyond Santa Fé, the crowd " booed " and " howled." Holliday simply had a screw loose; that was all. But when rails were laid and his dinky little line ran twelve miles out with " a wheezy engine and a few freight cars rigged up with seats and a passenger car borrowed " for the occasion, Colonel Holliday's boiled shirt swelled out as he crossed his arms with the ecstatic prophecy: " Fellow citizens, imagine, if you please, my right hand as Chicago, my left as St. Louis. Eventually the railroad we contemplate will reach these two cities and crossing at Topeka the intersection of my arms, will extend to Galveston, the City of Mexico and San Francisco. The coming tides of immigration will flow along these lines of railway and like an ocean wave will advance up the sides of the Rockies and dash their foaming crests down upon the Pacific slope."

A good deal of Rocky Mountain dew or what we now call " white mule " had drifted out among the cowboy onlookers and frontiersmen. Anyway, it had a mule's kick to it; and when Holliday reached his grand climax, one hearer just threw himself down on the ground, kicked up his heels and yelled, " The

damned old fool." It was enough to make a mule bray or a jackass honk; and the mob did both. You see it couldn't possibly be done! What did he take them for — fools? Pshaw! It was the supreme joke of the day. Yet Holliday lived to see that road go over the desert to Santa Fé, up the mountain passes that couldn't be traversed to Denver, down to the Gulf, east to Chicago, west to the Pacific. That is the kind of faith that removes mountains. Holliday also lived to see that same sceptic become an agent for what was one branch of his own line and the mayor of Topeka — which Holliday had founded.

There is no use in setting down the mileage of the Santa Fé; for with present plans for consolidation in the air, it may be twice its present length in a few years; but Holliday lived to see his twelve miles of road grow to twelve thousand and its first quarter of a million bonds guaranteed by a small county expand to assets of over a billion. If his dauntless spirit can look back to mundane affairs in the year 1928, he can see stock which was kicked about in a receivership at eight to nine dollars a share selling at close to two hundred on sheer earning power. Are we, or are we not, tools in the hands of a Divine Destiny? Each must answer for himself.

But to go back to the story of how the tools, good and bad, conscious and unconscious, willy-nilly, worked out that Destiny — it wasn't by sitting still with wishing instead of doing, with the jawbone of an ass instead of the backbone of a man.

By the time the Santa Fé reached Emporia in

1870, it was running two passenger trains daily in each direction at the appalling speed of eighteen miles an hour. And was Emporia proud? Was it? If you had been a pioneer on the frontier for ten years looking for a steam flag, how would you have felt even if the flag blew to the breeze from a wheezy little engine drawing rickety cars over a jolting roadbed? And the roadbed did jolt. It swayed the cars on curves like a rocking horse; for economy compelled inexpensive cars and light grading. I fancy your heart and your hopes would have jumped as crazily as the drunken cars. At Dodge City, by 1872, one of those amazing and unexpected windfalls of luck that come to the dauntless helped the struggling Santa Fé. Hitherto, Southern cattle ranchers, as the pastures dried in the hotter sun of advancing summer, had yearly followed the Long Horn Trail north with the seasons — then marketed as they could, east or west, easy when the Civil War was waging, harder now almost in the crash of '73 when values took an awful slump. The Santa Fé, with its freight cars increased to several hundreds and its engines to thirty or forty, came to the rescue and could carry those cattle out to Eastern markets. Dodge City was the great cattle town. The Santa Fé now got a more lucrative freight than buffalo hides and bones. The long mooing stock cars, which you still meet eastbound on the Santa Fé, in 1872 and '73 yielded the railroad a neat half million of unexpected profits and did much to save the road from the awful financial smashes that engulfed half the rails in the United States in that black era

of disaster. Anyway, it could hustle on with its grading and building to the state line of Kansas and get its land grant of three million acres within the time limit of its charter. Once these land grants could be patented, even in the appalling year of '73, the road could float three and a half millions in bonds and get the cash to go on building to the Pacific. How had they the courage? They could have stopped right there and then, sold their stock, sold their bonds, and retired on what would have been at that time opulent wealth. Why didn't they? It was what Jay Gould did. It was what many promoters of the West did — scuttle the sinking ship and let the ignorant horde of securities buyers drown.

As a great deal has been written about those land grants to the Santa Fé, perhaps their story should be completed here. They could bond the railroad for three and a half million dollars more cash, because they now had land assets; but what to do with those land assets! You couldn't sell an acre of land in Kansas at that time for ten cents. You couldn't give it away for taxes. Everyone was land poor and land swamped; so the Santa Fé took another wild jump off the deep end into the unknown. At that time there was in Russia a religious sect of thrifty farmers terribly oppressed by military pogroms. These Mennonites were pacifists. They had gold saved — lots of it — hidden away in chests buried in the ground. They lived in sod houses. They were used to the warm climate of Southern Russia. They were thrifty, splendid farmers, rough in appearance, tough in fiber, stub-

born and ignorant and tenacious in religious prejudice; but good stuff for arable lands. The Santa Fé sent agents to Russia. Interpreters interviewed bishops. Speeches were made in schools and churches. Men went from door to door explaining about the new land of freedom to worship as men chose. More than fifteen thousand Mennonities with two and a half million dollars' real gold — a third as much as the new bonds on the Santa Fé — moved to Kansas and bought the land at from five to ten dollars an acre with five to ten years to pay. The Santa Fé figured it would pay better to get traffic from those Mennonite farms, year after year, from settlers unembarrassed because of a good foot-free start, than to take all the settlers' first gold in a sale of the land and then leave him to flounder in debt for stock, or sink in years of low prices and other years of scant crops. The Union Pacific had been an *empire binder*. The Santa Fé became an *empire builder*. Henceforth, lecturers were kept in Europe. Agents were stationed at all points of debarkation to keep the emigrant from being fleeced by sleek exchange brokers or steamship runners. Agents welcomed the colonists to American shores, bought their tickets westward, accompanied them to the new land, and saw they were not cheated by land sharks or huddled in the cities for cheap labor. The government of Kansas welcomed them. They were not kicked in the face and told to get out because they were queer. They were shepherded to their new homes and given a good start. Editors' excursions became a new feature across the prairies. In a few years,

more than sixty thousand European immigrants had settled on the vacant lands of what are now Kansas, Oklahoma, Colorado. A third of the land grant east of Dodge City had been sold by 1880; and the Santa Fé had reckoned true. The settlers did create traffic to compensate outlay a hundredfold. They also brought with them new types of dry land wheats — Turkeys and Durums — which defied rust and drought. Colonizing ceased after 1886. Over and above costs, the Santa Fé cleared on its land grants exactly one dollar an acre. I can't see that as a very great steal from the public domain, much ink spilled to the contrary. Was there a town of over five thousand along the line that didn't clear more from the settlers brought in? I am neither condemning nor defending land grants. I am merely trying to get facts which are not controversial; and anyone who wants the exact figures can get them from Santa Fé reports up to the receivership of 1893, or from a dozen books dealing with land grants.

Of course, the Santa Fé benefited by far more than this on the freight sent out by the colonists. The great problem of the roads was to get a westbound traffic to fill the empties. This, the Santa Fé got in lumber shipped in from the South Middle East to build barns and houses for the settlers and later in wire for the fencing and coal for fuel and then, as the farmers prospered, in implements and manufactured goods for the farm buyer.

Perhaps the greatest mistake the Santa Fé made in this era was in another amazing streak of good

luck. Just as the gold rush to California subsided to the humdrum there came the great silver discoveries up in Colorado. The Santa Fé — if you will look at your map, you will see — had gone in south of Denver. It was now tempted to push up the Arkansas Canyon for a share of the new traffic. It triumphed in its aim, but its triumph acted as a boomerang that came back on its head in '93. First, it had to fight what is now the Denver and Rio Grande, then and until recent years, a Gould Line; and Gould was an ugly customer in a fight. It meant rate slashing below any possible cost of carrying freight. It meant buying securities of other lines to block them off; and many of them proved so worthless, one of President Ripley's first acts on taking hold of the demoralized system after the receivership of 1893, was to cut from the Santa Fé every unprofitable parasite line and sell it for whatever he could get, or trade it for a better connection.

But worst of all, this move brought about what is known as the famous " Canyon War." There is no use pretending that either the Santa Fé or its rivals stayed within the limits of the law in this war. They did not. The fight kept state and Federal courts busy giving and revising decisions and appeals with an enormous bill of costs to both sides and an enormous enriching of attorneys by prolonging the court contests; but no public scandal, not a breath of bribing legislatures and herding voters in droves, as in the Erie and Crédit Mobilier follies. But out on the field it was one of the wildest rough and tumble scrim-

mages in a lawless period. Here is the story in brief.

Reference has been made to Holliday's uncanny prescience in picking men for the Santa Fé. Albert Robinson, his construction engineer, was another example. He was the great builder of the Santa Fé, and later of the Mexican Central Railroad. He was more than that. He was one of the first engineers in the United States to encourage the use of oil burners on locomotives, without which some of the most famous oil wells in both Mexico and the United States could never have been developed; for they were oils much higher in fuel than in illuminating qualities. Under Robinson the famous Canyon Fight took place. Like Dodge, on the Union Pacific, whom he had to fight in this Canyon War, Robinson was a Vermont boy and had come up by the shirt-sleeve route. His father died when the boy was very young, and from his tenth year Albert was the mainstay of his family. In his twelfth year, his mother married again and the family moved to Wisconsin; but the second husband was frail, and again the main burden fell on the boy. Clearing timber slashings, clerking, hiring out to neighboring farmers, keeping books for little pioneer shops, he sledded along the hard uphill road to success by the old-fashioned method of work. It used to be a joke of Robinson's early youth that his first wages as farmhand were a " fat hog " and he had " to drive his salary home with a rope tied to its hind leg "; so he should have been amply schooled for the Canyon Fight. By the time he had

the Wisconsin homestead so it would support his mother's family, he had saved the colossal capital of $175 and with that he proceeded to Ann Arbor, where he took his degree in civil engineering science at the age of twenty-five. His first railroading jobs were in Colorado as axe man, chain man, engineer, then civil engineer; in his twenty-seventh year Peter discovered and took him on the Santa Fé. This was in the period when Holliday used to spout his predictions of a great line to the Pacific amid the "boos" of a good-natured, amused audience. I have given this briefest sketch of Robinson's career because so many people to-day still cling to the fallacy that it takes "pull" to get up life's ladder; whereas success in railroading proves it isn't "pull." It is courage and work and brains — doing things in the day's job better than other men do them, daunted by nothing, going ahead and letting results do the bragging. How Robinson got the Santa Fé in a series of the most daring switchbacks over the Raton Mountain down to Las Vegas, New Mexico, and then westward to Arizona, would fill a book. Always he made friends with local towns by running his line through them, instead of coining money for his line by laying out new town sites and compelling the old towns to move. To this there were only two exceptions — old Santa Fé and what is now Albuquerque. Old Santa Fé was not skipped because the town refused to vote bonds in assistance — as many people yet believe. It was the company's wish in its first survey to put Santa Fé on the main line; but in the late seventies, with the

country just struggling up from the crash of '73, it was found too expensive to detour the mountains in an almost complete circle off the main line to get in and out of Santa Fé; but to compensate a little branch line was run up from Lamy to Santa Fé, and for this branch line the county did vote one hundred and fifty thousand dollars worth of bonds. Albuquerque was an example of exactly the opposite tactics. Robinson's survey had put Bernalillo on the main line in 1878 as one of the great divisional points west to the Pacific and south to Old Mexico, Texas, and the Gulf. All the old Mexican ranches but one had granted the railroad right of way on reasonable terms. Old Don José Leandro Perea either didn't see what newfangled rails were going to do for sheep men or he gambled on one ranch holding out for a fancy price. He asked four hundred fifty dollars an acre for what other ranchers had sold at two to three dollars or granted free, and he lived to see his native town decline while the new city of Albuquerque was born from his stubborn folly. I don't know whether the old Don counted on young Robinson entering on an endless palaver; but Robinson's masked face gave no sign; and Albuquerque became the financial center of the new territory.

Remember Jay Gould had transferred his tireless activities to what is now the Rio Grande area; and the Rio Grande didn't particularly want to see the Santa Fé get over Raton Mountain into what the Rio Grande might yet need for its own stamping ground, a Missouri-Pacific line. On the very train which

Robinson took in 1878 to look over Raton Pass was the engineer of the Denver and Rio Grande also bound to look over the pass to the south for his line. At a way station, the Denver and Rio Grande man got off to get a night's rest. Robinson hired a team, a buckboard, and with shovels and firearms and a few men drove ahead to the foot of the pass. At four o'clock in the February morning, by the help of lantern light, he put his gang to work just where you now enter the Raton Tunnel, which has replaced the first switchbacks. It is said that old frontiersmen keeping little lodging houses for passing travelers, for the fun of the thing or perhaps itching for a real good old-time rough and tumble scrap, shouldered picks and spades and joined the gang. When the Denver and Rio Grande gang came along leisurely at nine A.M. under their engineer, behold rail graders for the Santa Fé were already in possession and at work like beavers too intent to be interrupted. Behold also, the Santa Fé men were armed — it might be for mountain game; but then, it might not. Being good fellows, the Denver and Rio Grande gang retired, and the engineer covered his retreat by the explanation that he was on his way to the Chicken Creek Pass to the west. If he was — it was a wild goose chase; for Robinson knew it couldn't be used.

But when it became noised about that the Santa Fé were not only going south to the Pacific but actually had the temerity to plan invading Central Colorado — the Denver and Rio Grande's own peculiar territory now promising enormous returns in a mining boom

— fireworks broke loose; and this time they were real fireworks. The Canyon War was on. Robinson had examined the Royal Gorge years ago. The Santa Fé didn't want it then, but it did now. There is no use in following the legal seesaw. As Vanderbilt said long before, the law is slow. After decisions and reverses, the Supreme Court finally said no pass could be occupied to the exclusion of other carriers; so Robinson's quick judgment in '78 and '79 was a true instinct. He would take it for the Santa Fé, lay his rails where it was easiest and let rivals take what was left. Then the courts could decide.

Now we shift to the Royal Gorge to see what happened. By team from Canyon City to the mines, one hundred twenty miles, cost the same as to ship the same goods by rail to New York. The rate was four cents a pound. The only route up the gorge was by the headwaters of the Arkansas, which are now the delight of the summer tourist sitting in the observation car, watching the dizzy whirl of sky-colored foam and rapids between precipices thirty-five hundred feet high straight as a wall and from side to side only thirty feet in some places. Robinson was on his way to the Pacific Coast with the Raton Pass victory behind him, when in April he got a telegram to go back up to Colorado and take possession of the gorge. Other engineers would connect with him. Morley, another engineer in charge in Colorado, had got out on the ground to Pueblo, when he learned that a big force of Denver and Rio Grande men were on the way west on a night train to beat the Santa

Fé. Now remember, the local points were all in sympathy with the Santa Fé. It was midnight in Pueblo and the dance hall in full swing; but only Denver and Rio Grande trains led up far as Canyon City. Morley got out quick, hired a team and started on a wild race for Canyon City before the Denver and Rio Grande train could come in. If you know what the wild gorge looks like by day, you can guess what it was in a midnight race. Across the stream, up the stream, along the river bed, raced the team. The sun came up when the Santa Fé team was three miles from Canyon City and far behind the Santa Fé man could hear the Denver and Rio Grande engine hooting as it rounded the sharp curves carefully, all unconscious the team had won the race and Morley, the Santa Fé engineer, had got almost to Canyon City first. Grabbing a spade stamped D.&R.G., mounting a pony, the Santa Fé engineer rode on like the wind and went two miles beyond Canyon City. The other twenty Santa Fé men came on with picks and spades and the usual frontier firearms over shoulders or in belts — but all were uncased and loaded. Then up came the Denver and Rio Grande gangs, having poured out of the train two hundred strong. The Santa Fé men were at work. The Denver and Rio Grande hooted with laughter — twenty against two hundred! But the twenty had possession. They also had the guns. This meant shooting and shooting quick. The Denver and Rio Grande were hard up financially — very. They backed off from an immediate fight and carried their case to the courts, and meanwhile laid a grade on the

other side of the river — which can still be picked out.

While the courts were seesawing, each company kept its workers on opposite banks of the river camped in adobe and timber shanties; and there is no doubt the roughscuff rabble enjoyed the exciting adventure; for those were not dry days, nor were the men a Sunday-school class. Once when Morley was in Canyon City, he found a shipment of firearms had come in for the Denver and Rio Grande. The express man was a friend of Morley's and something happened to those guns so the triggers wouldn't " trig." Then Morley got some guns for his own men from local merchants. Another time when a train load of four hundred cowboys had been sent in to Robinson from Dodge City at three dollars a day and had had perhaps too much Rocky Mountain dew, they surrounded Robinson's pay car and demanded five dollars a day for the week that had passed, or — well, or anything. They would go over to the Denver and Rio Grande crowd across the river, or they might use the argument of two ties strung across the roof of two box cars with a noosed rope below it, or — Robinson paid wages in cash from a little adobe shack he used as office. He went out, and facing the mob told them he would pay them exactly what he had pledged, not a cent more, to come in one by one in line and get their cash. He was then thirty-five years old. Robinson and a bank cashier sat behind a table with a pistol to the right and a pistol to the left hand of each man. As a result of the Santa Fé's victory,

Denver and Rio Grande stock had fallen in value to 16 on the open market. By the time the Supreme Court handed down its decision that no road could exclude another road from a pass, the Santa Fé had bought up its stock and were in control. Jay Gould had shed his bad investment as he always did in time to escape the receivership that swamped the Rio Grande and was concentrating on what we now know as the Missouri Pacific and the Southern Pacific, to strike a more vital blow at the Santa Fé by capturing their Gulf and Pacific traffic by shorter lines. A dozen episodes of this famous and infamous fight could be told. State troops were called out. A cannon was once trundled to the scene of action. Engines were crippled by unseen hands. Deputies and sheriffs paraded the gorge with pistols in their high boots and bullets in their belts; but more than one minion of the law found himself locked in an express car, while wires were tapped to ascertain if a new court decision would uphold more action and less bluster. Novels and plays could be written around the two eventful years. Looking back now, we can call it sheer vaudeville, but it caused a terrific turmoil and cost the contending lines not less than half a million each. Anyway, the Santa Fé got its line within shipping distance of the new mine at Leadville and that is what it wanted.

Of course, the victory proved a boomerang, as such victories usually do. The story is too long to tell, how the Santa Fé finally got into Chicago, on to Old Mexico, and down to the Gulf of Mexico, and across the Mojave Desert to Los Angeles and the Pacific;

but when the Santa Fé fell into receivers' hands in 1893 and its stocks dropped to 8 and 9, the first thing Mr. Ripley did on taking hold of the reorganized line in '96 was to shed or trade all its nonproductive feeders and laterals for revenue producers. Among the lines discarded went the Denver and Rio Grande, to this day half owned by Gould's old venture, the rejuvenated Missouri Pacific.

It is asked how such a line proceeding so carefully and now so enormously rich could crash into a receivership. The answer can be given very tersely. The Santa Fé was built too fast. It thought it had to go ahead to anticipate rivals, and it had; but quick building meant repairs, replacement, rebuilding, regrading, just at a period when the whole country was in rail convulsions from too much building for promoters' profits and too little with a view to revenue returns. Capital could not be borrowed to bridge over the hard times. The Santa Fé could not borrow to meet interest on bonds. Loans were called in panic fear. Though Gould had died just at the end of the year 1892, his Missouri and Southern lines had struck a terribly vital blow at Santa Fé revenues. What with rate slashings, he had cut returns below costs of operating. Then, just at the period when Holliday had counted on his colonists being in prosperous estate to put his line on a solid and permanent basis, came the final blow — the grasshopper plague and that cycle of drought which seems to strike some section in the world periodically. The Santa Fé had to carry out thousands of colonists free of charge to avert

starvation. It had to convey in thousands of pounds of provisions free for settlers who stuck and would have perished, or abandoned the Southwest without help. These are things that do not go in financial statements nor get much credit, but they explain receiverships. They do not go into financial reports because they would hurt the road; but it is to be hoped they go in the reports of a Higher Record; for they are human documents — very human, but always untold in documents.

Of course, the Santa Fé came back to prosperity swiftly and surely — as the dry cycle passed and universal irrigation in the Southwest forefended against such disaster in the future. Citrus fruits and oil became great revenue channels to every eastbound road. The leap of the Pacific Coast to prosperity provided westbound traffic. The stampede of another back-to-the-land boom with all its follies and prosperities in the early twentieth century again restored cattle traffic to the new Eldorado of the Northwest and again sent lumber shipments trundling to the Western prairies. Then tourist travel to a genial winter climate capped the climax. On *not one* of these factors had the first founders of the Santa Fé counted; but they came.

If it is asked how a road whose track values, stock, and bonds total only something over six hundred millions, can be selling at a market price of almost two hundred dollars a share, again the answer is very simple. As the Santa Fé under President Ripley worked back to solid ground, it was able to buy

cheaply many securities that would be of value as feeder lines, terminals, connecting links, as less well-managed lines fell under the auction hammer or their stock depreciated on the open market. That is what is meant by the hackneyed expression " plowing profits back into the line," but it is done only by withholding those profits temporarily from investors, who see their shares go up in value and can sell if they so desire. Whether any law can compel such lines to take into their family nestling lines which are not profit makers is one of the things that must be determined in our own day.

People talk of rails as " heartless, soulless corporations "; but are they? Isn't each line the reflex of countless nameless workers in its ranks and of the big men at its head?

Once when Mr. Ripley was asked the secret of the Santa Fé's swift return to success, he answered simply " work " — the day's job well done — the co-operation of every man and woman in the rank and file.

And once when a great dinner was held in Chicago to celebrate his seventieth birthday, he paused, as glasses were raised to his health, and said:

" Before proceeding I desire to pay tribute and praise to her who forty-four years ago joined her fortunes to mine and who ever since has provided the comforts and rest of a quiet home; who twice has accompanied me through the shadow of death; who has watched over me mentally, morally and physically; and who is mainly responsible for such success

as I have had in conserving mind and body. I ask you, friends, to join in drinking to the health of my wife."

Then as the shadow of crossing the Last Great Divide came very near in 1920, he penned these words:

"This is the sunset glow. The shadows will soon begin to lengthen and the road grow more dim; but, if I have lived to win the approbation of my contemporaries and to be of benefit to those with whom I have been associated, I can look with complacency on the signs of the closing day and go to my rest content."

There let the sunset drop on another of the great rail adventurers of the century.

What new era will the next sunrise reveal? Who can predict?

The past has discounted the wildest dream of the wildest fool. We only know that a free people, with the greatest individual liberty any people have ever enjoyed in the records of the human race, have never once been laggards in meeting Destiny halfway. The past has left us with a heritage of lessons from that past and of hopes for the future.

Chapter XXV

The Crash Of '73 And The Northern Pacific. 1856–1880

AGAIN I see the Northwest as I first saw it. It was in the middle eighties. I was a very small child — in fact, in white pinafore, skirts sticking out like a canterbury bell upside down, leghorn hat tied under the chin and a garland of roses round the crown. Perhaps it is as well I was a child when I first saw the Northwest. Childhood impressions are truer than grown-up generalities. We crossed Lake Michigan on a ferry and changed to a St. Paul sleeper to go to St. Paul. The sleeper was primitive. No spacious wash rooms for little folk with dirty faces, but square cubbyholes where we could get soused off in cold water before we reached St. Paul. The tide of colonists to Minnesota and the Dakotas was in full swing. On changing at St. Paul, there was such a mob of people that baggage rooms and freight sheds could not contain the piles of trunks and carpetbags and what not that poured out of our train, till the platform resembled a pyramid. The throngs were so much greater than the trains could handle that we had to change from sleepers to first-class plush-seated cars, with little doilies that had once been white as head rests. At the Manitoba boundary, we had to change again to cars which had no plush seats and were cramped to standing room. There was such a delay coupling up extra cars at St. Paul that we had time to wander through the town. Rain had fallen the night before and we ran ahead

of elders on a two-plank sidewalk, where the frost had loosened nails. When we stepped on one end, the other end of the plank bounced up to the detriment of those stiff-starched white dresses. The mud was slippery as grease; but there were no casualties in the sudden sittings down. A softer glue for pillow never received small folks in its loving embrace. The real estate agents said it was proof of the soil's rich qualities. It was. We came back with lots of that rich real estate on our skirts and enough on our boots to anchor runaway feet.

Whether, beyond the boundary, coaling stations were short and the engine had to stoke up with cordwood, or the watering tanks were not yet numerous enough and we paused for the old engine, with smoke stack like an overturned plug hat, to get an extra drink, I don't recall. I do know that from the boundary on north, the smoke came back in clouds on big leghorn hats poked out of the unscreened windows, their wearers anchored to rear by the hands of elders hanging on to heels. I also know we were delayed for an hour or two at a time on the bare naked spring prairies where the crowded cars poured out the cramped passengers to wander in fields that were such a wonder world as you can see nowhere in North America to-day except Peace River. The prairie roses scented the rain-washed air. We brought them back to the train in armfuls. The tiger lilies stood higher than our leghorn hats and were of a gorgeous Turkey red spotted with black velvet that resembled black butterflies against the sun. The windflowers tossed

fairylike tresses to the breeze. We children went absolutely mad. The poor wheezy engine had to toot its head off to get travelers back to cars; and what an amazing conglomeration of passengers: brides and grooms cuddling up in narrow seats that gave excuse; families from babies in arms to husky boys and girls in teens; youngsters with down for beards and deep gruff voices discussing how their parents had trekked to Ohio, Illinois, Wisconsin, Michigan, and "got in on the ground floor" and made fortunes just sitting on land, and here was the same fortune at the end of our rainbow trail; scamps, swindlers, pickpockets, missionaries, teachers, preachers, frail office hands with pasty faces, about as fit as the babies in arms to cope with the hardships between them and the rainbow; but no old folks — not one. It was a land of youth for youth.

That was the amazing thing the first years we resided in the West. Except among the retired fur traders, you hardly ever saw a gray head. The churches were jammed with young couples and prolific families. To the Sunday schools came many an urchin in a galloping dog sleigh, which compelled sedate elders to scamper from the walks to a snowdrift. Those sled dogs were a curse in summer till a city pound netted them for taxes and coined delinquents into fur coats. They got my own dog twice by prying off the tax, when he was sent out to a ranch where I believe he ended life in an Indian stew.

As we crossed Red River to Winnipeg, we were lifted up and poked halfway out the windows to see

one of the first bridges to span the great river, the highway of the fur trade for almost two hundred years. There was an interesting fact about that bridge. On it worked a young man at a dollar and a half a day and a contractor later to become famous. Though both were our near neighbors a few years later — where one of the world's greatest department stores now stands — we didn't know enough of what was going on under our eyes to realize the significance of their names. One was Sir Dan Mann, the other was Sir William Mackenzie — the fathers of the modern Canadian Nationals. On the outskirts of the city, now occupied by fine residences, lay a farm with a little piazza-encircled cottage, which didn't represent much farming. It was chiefly famous to youngsters as the rendezvous of a buffalo herd more or less tame — chiefly less; for in the roundup of buffalo for winter feeding, ponies were often tossed and killed by the vicious old bulls thrusting horns in the soft flank behind the saddle. On that farm, for part of each year, lived the Canadian Governor of the Hudson's Bay Company. His name was Donald Smith, later Lord Strathcona. Often there came to visit him a Norman Kittson of St. Paul, also a fur trader, a George Stephen, later Lord Mount Stephen of the Bank of Montreal, a Mr. James J. Hill, who had run river boats down the Red River from St. Paul to Fort Garry (Winnipeg). Again we didn't realize the significance of those names. They were respectively the fathers of two other great transcontinental rail systems — the Great Northern and the Canadian

Pacific. It was prior to this era that Mr. Hill and George Stephen and Donald Smith took a wagon trip from St. Paul to the Canadian border. Donald Smith and George Stephen were being urged to " back " a railroad from St. Paul to connect up with what had now become a certainty — the Canadian Pacific. Smith had charge of the pension fund of the Hudson's Bay Company to be placed in good investments at his discretion; but would the Hill venture be discretion? Stephen was still a Montreal merchant but he was also a director of the Montreal Bank, then the strongest moneyed institution in Canada; and his mind was in doubt. Could such a road unbacked by the American government, when the Canadian Pacific was backed by the Canadian government, ever be made to pay? Kittson and Hill were sure it could. On that trip went a great Catholic prelate, Archbishop Ireland. Legend has it the democrat, or buckboard or what ever it was, had to draw aside for the settlers' tented wagons streaming in a continual caravan for the western sections of Minnesota and the eastern sections of Dakota. What were they after? Just what the husky young " old " heads had said in our own train — " to get in on the ground floor " with their families ahead of the railroad and reap the increase in values bound to result from rails, as such values had increased from Chicago to St. Paul and Omaha. The observers sat very silent. Hill was too wise to urge. He knew these moneyed men were now at the point where facts alone would turn the scale and arguments might be mistaken for desires. Archbishop

Ireland spoke first. "Yes," he said, "churches and schools must keep abreast these caravans. These people have their families. They mean to stick, not flock in, grab profits and flit out." Stephen looked up with that sharp glance which his associates knew so well meant a quick decision. At that moment, Hill knew he had won life confederates, who never failed him, though the charters of the two great rail systems kept them separate lines. Smith needed no persuading. He knew every foot of the country from Montreal to the Rockies, by pack train, canoe, and dog train. Two other very great names in those curiously portentous times! On the outskirts of North Winnipeg was an almost terribly efficient young Irish American, in charge of supplies and stores for the construction of the western sections of the Canadian Pacific. When one recalls the awful waste and overcharges in construction accounts for the Central and the Union Pacific, the importance of this young Irish American's job can be realized. Not a pound of supplies from nails to hams slipped past his scrutiny in waste. His name was Shaughnessy. In the city, off and on, was another eccentric roly-poly but quietly poised and powerful construction boss and section manager for the Canadian Pacific. His name was Van Horn. I don't know why we children were not taught the meaning of what was going on under unseeing eyes, rather than dates and names from the past with which we were stuffed and could recite by rote like parrots. I recall we were yearly lined up in gala attire and marched to Government House to have

our heads duly patted " as good little girls and boys " by governors-general sent out from England. I know for a fact that not once from my tenth year to my sixteenth was one of those true empire builders, who lived among us, ever asked to come and address us children on what he was trying to do. Had they done so, many a bitter fight when schoolboys came to voting age might have been averted. Better know the signs of our own times than the geography of Cathay, or the names and dates of Saxon kings, which I can string off yet down to the Norman Conquest.

No use setting down what the figures of population were for those days. No two historians agree on the figures — and for the best of reasons. The figures didn't stay put. They were up one year and down the next like the crest and trough of advancing waves. Immediately the Canadian Pacific began to build west, a hundred thousand floaters had tumbled pell-mell into Manitoba. Winnipeg was then three-quarters a tent city, and every second tent was either a restaurant or a real estate office. Then the boom collapsed and the population fell to somewhere between twenty thousand and ten thousand. Minnesota, on the other hand, had suffered from the crash of '73 and the Sioux massacres, which took toll of two thousand lives and sent settlers out in droves. By the eighties another rush of settlers had set in, which did not culminate till '93. The best figures I know are from President Folwell of Minnesota University and he gives them with great reservations. When the 1873 crash came and Governor Austin threatened the rail-

roads, that he would "take those robbers by the neck and shake them over the furnaces of hell" — (poor things, they were already sizzling over the furnaces of that hot pot) — Folwell puts the population at anywhere from one hundred seventy-five to four hundred thousand from Lake Superior to the Dakotas, but that population fluctuated. When Indian massacres swept these areas, populations went down. When Indian massacres ceased, populations went up.

With such populations, why in the world were Minnesota and the Dakotas so backward in seeking statehood? Because in territories taxation was light. Colonists didn't preëmpt. They sat down as "squatters," whose rights were subsequently respected; but territories couldn't get land grants. States could; and with land grants came rails; and with rails came the rush of people. Without rails, settlers had to confine themselves to wooded river banks for firewood. With rails, they could spread far afield and use soft or hard coal as they could afford the price. They could also get their produce out to market. It is almost ludicrous to have to record the first heaviest freight on the Canadian Pacific eastbound was buffalo bones, hides, furs. The first heaviest freight of the American rails was the same, plus yearly growing quantities of wheat for the mills of Minneapolis. The westbound freight took care of itself. There were none of "the empties" trundling West, which are the worry in slump years to-day. Settlers' effects, dairy cattle to replace the rangy stuff from the South-

west's Long Horn Trail, manufactured goods for the newcomers, lumber for settlers' cabins to replace knock-up cabins and tar-papered shanties and sod shacks — chiefly from Eastern Manitoba for the Canadian Pacific, from Eastern Minnesota for the Dakotas — crammed every westbound box and flat car. "I never saw anything like it," Van Horn once told a group of us crossing the continent with him. "I wonder any of us went on. We could have quit then and there rich for life without a worry. The money was just oozing in."

"Why didn't you quit?" someone asked.

He laughed. "I think it was because we couldn't. The Eastern investor didn't realize. Our securities weren't rated worth more than thirty-nine to forty-five cents on the dollar and Hill's at highest, as I remember, at sixty-five cents. We couldn't quit and leave our investors in the lurch. We had to go on and spend all the money coming in on better cars, heavier engines, decent passenger coaches, replacement of trestles, steadier roadbeds, better curves. Ever traveled the roadbed in those days? Remember how often the trains were on schedule time?"

Most of us did remember because those occasions were so rare they were red-letter days. We had hooted ourselves hoarse when the first transcontinental crossed the plains. In a few years, though we didn't use quite such hotshot as the Governor of Minnesota in an election, we were hooting at monopoly in a fashion that sent rail securities to the bottom of a well. Before rails came to the Northwest, here is the

actual scale of prices as given by President Folwell for Minnesota and the Dakotas: apples, none at all, for the plains had to depend on wild berries, cranberries, and plums; rice, a dollar fifty a bushel; flour, fifty cents a pound; salt, one dollar a pound; pork, eighty cents; tea, four-fifty, or home brew from leaves with a seasoning of berries. St. Paul with three hundred people was known as Pig's Eye from the facial resemblance of a smuggler, who lived in a cave on the banks of the Mississippi and secretly plied his liquid wares to the soldiers of Fort Snelling. Meat was chiefly buffalo pemmican from half-breed hunters, who came in solid two-wheeled ox-drawn carts with their squaws and progeny sitting on the pemmican sacks. Those buffalo pemmican carts still screeched aloud to heaven through Winnipeg's muddy streets on ungreased wooden axles for five years after we went in by rail. I have one of the little sample pemmican bags in a French cabinet in my house to-day. We didn't like the smell any more than we liked the noise of vociferous drivers and screaming squaws and bawling children. That little pemmican bag smells yet. Every house-cleaning time I have to rescue it from the ignominy of the attic. It took fifteen days to go from St. Paul to Winnipeg. It takes a night now. When rails first came to St. Paul, squatters got out with clubs to tear up the rails till they learned their squatters' rights would be respected. This was about the time President Fillmore was jubilating on an excursion up the Erie Road. There were about one hundred

nineteen little steamers plying up and down the Mississippi as high water permitted and by 1857 they had brought to what was vaguely known as the West, one hundred and fifty thousand people; but those figures went up and down, as I have told. The land gamble was wild as Jay Gould's gambles on the Erie. Land bought at a dollar and a quarter one day sold the next day at two and a half, and the next at fifteen dollars an acre. It was easy money. " It seemed to drip from the skies," as Folwell says. Stores could not rush up fast enough to house goods from weather. Over twenty-five rail charters came from the press the first years of statehood — and died stillborn; for when settlers could " squat " and get land free, why buy it from land grant roads?

The Civil War did not materially hurt the Northwest. It helped. It sent prices soaring, for all the farmer could freight out to market or send down to Wisconsin where the expanding Chicago and North-Western and the Chicago, Minneapolis and St. Paul rushed supplies to the front. Neither did the collapse after the Civil War hurt the Northwest; for the Franco-Prussian War kept prices up; but when the Franco-Prussian War was over and prices came down so hard they bounced, another tune was sung. The speculators folded their tents like the Arabs and stole away. St. Paul's population went up and down like Winnipeg's, and the official census continued to lie like a gentleman and whistle like a boy scared in the dark. I don't think I am wrong in accepting wild guesses at the truth that it bumped down, for Winnipeg, very

close to between ten and twenty thousand; but it is only a wild guess.

There were scandalous land frauds, of course. When have there not been in wild land gambles? The Supreme Court counted as an Indian, fifty per cent Indian blood; and where the half-breed squatters got "scrip" for land, they sold their "scrip" both in Canada and in Minnesota at fifty cents to one dollar and fifty cents an acre. Many a timber limit, which proved a gold mine when another rush of settlement came, had passed into the hands of the great lumber barons, who coined their lumber into gold. There were not many governors of Minnesota or lieutenant-governors of Manitoba, who threatened "to shake the robber lumber barons above the furnaces of hell." Presumably, the lumber would burn too hot and might singe some of their best political friends.

To-day, Minnesota numbers two million, seven hundred thousand people; North Dakota, six hundred and fifty thousand; South Dakota, seven hundred thousand; Montana, five hundred and fifty thousand. Not twenty-five per cent of those people could exist without the rails.

How did the rails happen when as Van Horn confessed, "We could have quit then and there rich for life without a worry"? Was it a case again of Destiny? Was it like those old galvanic batteries in a circus? First you took hold and liked the sensation. Then you didn't and found you couldn't let go and squirmed.

"Here beginneth the first lesson" of rails in the

Northwest — to quote from the liturgy — with the awful crash of '73, which not only shook them above the place of the governor's pious wish but rocked the whole financial structure of the nation from New York to San Francisco. The story of the Northwest rails and the crash of '73 is one and the same. Whether the rails shook down the banks, or the banks shook down the rails, depends on the point of view. The banks said the rails did it. The rails said the banks did it. A rude pen-drawn cartoon now in the Minnesota Historical Archives portrays the farmers being crushed to death under the ties, a coach filled with "bloated capitalists," an engine made up of harnessed Wall Street "cats and dogs," Satan behind spearing the caravan on to the precipice, his tail switching like an angry tiger's. There is a lot of truth in that old cartoon. Farmers below the ties; capitalists in the coach; "dog and cat" investors hauling the load — all speeding to the crash hard as they could gallop, and they didn't know it.

The Northern Pacific idea was really the brain child of that same Asa Whitney, whose persistence had roused the country to the great design of a transcontinental to link Atlantic and Pacific; but there were peculiar reasons why Whitney's idea of a transcontinental in the North persisted. This was recognized in Stevens' surveys of the fifties. Grades in the North would be easier through the Rockies, where there were lower passes. Trackbeds would be infinitely cheaper across flat or even rolling prairies. On long stretches, the cost would not exceed eight

to twenty thousand dollars a mile. Most important of all, good farm land promised a perpetual revenue east and west. That meant sound railroad finance from the first. The Chicago, Milwaukee and St. Paul and the Chicago and North-Western were already proving this. From purely farm revenues going ahead link by link as income permitted expansion, they were already up through Wisconsin and across Iowa by 1856.

Stevens' surveys up to the Civil War practically laid down the very line now followed by the Northern Pacific; but the mistake made by the first backers of the line was to waste time trying to get Congressional cash aid as well as land grants similar to the Union Pacific and the Central Pacific. This, Congress would not grant; for it did not regard a Northern transcontinental as a national necessity. It did, however, double its first land grants. The name Northern Pacific first came up in '57 from Washington Territory and was used again in the Federal Senate in '61, but until the close of the Civil War the Northern Pacific as a line "existed only on paper."

Then there appeared in the Northern Pacific arena Perham, a Maine man absolutely obsessed with "the big idea." He did not shy at a possible cost of a hundred millions; but he made the mistake of thinking he could get one million people each to put up one hundred dollars and then he said blithely — "the road is built." Unfortunately, actual roads aren't built that way. A few Boston people subscribed from ten to one hundred dollars. Perham then turned

The " Grand Central Depot " in New York, completed in 1871, was one of the spectacular results of the enormous rail expansion in the decade succeeding the Civil War. It enabled trains to come quickly to the heart of the city.

Through the modern New York Central Terminal, which has supplanted the ugly structure erected in the 'seventies, more people pass daily than inhabited the Colonies during the Revolution.

THE MODERN COLOSSUS OF (RAIL) ROADS

This old caricature from *Puck* pictures Vanderbilt and two of the lesser buccaneers of railroading — C. W. Field and Jay Gould.

again to Congress and got his charter signed by the President in 1864. Then he returned to Boston to get the strongest financial group he could muster behind the Northern Pacific. He was a rich man himself and had powerful friends. There was hardly a prominent man in the North Atlantic States not among the one hundred thirty-five organized to put their shoulders to the wheel. Perham was, of course, elected president; but he little realized the burden he was assuming. He estimated the cost at one hundred twenty millions, but he averaged the lands to be sold at ten dollars an acre, or $473,600,000 for over forty-seven million acres. The highest price averaged for the Northern Pacific lands for ten years was two and a half dollars an acre. Subscriptions had now come in for two hundred thousand dollars to build a one hundred and twenty million dollar line; and out of this had to be paid costs for surveys and charter and what not. The trouble was that the subscriptions were not ample enough. The treasury was empty as a bell except for the clapper; Perham was the clapper, and there were debts. Perham then got another brilliant idea — make Boston the eastern terminal. At this, the big men of Boston did sit up. Utterly exhausted, Perham resigned to die in poverty, the victim of "a big idea," and John Gregory Smith of the Vermont Central came in as president. The Vermont Central was to be the link westward; but the trouble again was that Eastern capitalists would not lend even on that huge land grant. Smith at once saw he would have to change his tactics

and muster a great rail syndicate, with enough cash to push such a publicity campaign as the banking world had never known; then induce the strongest banks in the world to market bonds for the Northern Pacific. The Erie, the New York Central, the Pennsylvania, the Chicago and North-Western, came in to help him there; for they realized they might all share in the new traffic from such a great line. This was both a fortunate and an unfortunate move. It threw the destinies of a great Western line into the control of purely Eastern hands and created a suspicion against it in the West that it might be used for such stock juggling as had wrecked the reputation and the finances of the Erie; but it did bring in the most powerful banking firm in the United States, and through that banking firm the most powerful banking firms in Europe with the exception of Germany. A great many people thought, and still think, that the Northern Pacific would have gone ahead faster if, like the Chicago, Milwaukee and St. Paul or the Chicago and North-Western, it had gone slowly ahead step by step; but they forget that the Civil War did not stall those lines — it enriched them. They also forget that Indian wars did not react in Wisconsin and arrest the flow of colonists. Prior to 1870, the Northern Pacific — as its official historian Smalley says — "went to sleep." It could neither sell its lands nor bond them. No one would touch the bonds. It is easy to say it might have done this or it might have done that. It had tried both this and that; and had come to a dead stall.

The greatest banking firm in the United States was Jay Cooke and Company. Its rank equaled that of the Morgans in the United States, and of the Rothschilds in England. It had branches in all the big American cities and all parts of Europe. It was bold, enthusiastic, cautious. Jay Cooke had popularized the government loans that carried the country through the Civil War. He was shy of the Northern Pacific at first and sent out his own exploring parties and his own engineer to examine and report on every mile of the projected line. He went out quietly himself and sized up the Western situation from Chicago to Lake Superior. On this trip he invested heavily in lands near Duluth and in Iowa. Each of the big groups urging him was also getting personal reports. Our old friends of the Erie — Dr. Lord and Mr. Diven — were among such emissaries. They examined from Red River to Puget Sound. When the reports came in Jay Cooke was enthusiastic as any Westerner; but he drove a hard bargain. The mortgage taken by him had to cover the lands and the line. The one hundred million dollars needed would then be issued as bonds bearing interest at seven and three-tenths per cent. Of each hundred-dollar bond sold, the Northern Pacific would get eighty-eight dollars, Jay Cooke the difference; but Jay Cooke was to sell those bonds at par or lose the difference in his own profits. In addition, for every one thousand dollars of bonds Jay Cooke was to get two hundred dollars of a stock bonus; so if the great adventure went through, Jay Cooke had assured twenty

millions of stock free and twelve million dollars cash on the bonds. In return Cooke bound himself to raise five million dollars within thirty days after January 2, 1870, to begin construction at once.

The question at once comes up, did the big group put up one dollar of money for the residue of stock its members were to get? Except to pay the debts of Perham's group — about six hundred thousand — *not a dime*. Sounds bad, and raised a stench in many nostrils later; but wait for the end of the story.

It would not add clarity to say that the road was to go ahead in sections in order to be completed on time to fulfil its charter, on which it already had extensions. The plan was to connect up from St. Paul to Duluth; then go west to Bismarck; then down to Fort Benton and Great Falls; then come east from Tacoma through Yakima to the Rockies which were to be traversed through the old fur traders' trail of Hell Gate. At this period Cooke and his friend succeeded in getting the land grant almost doubled. In addition, Jay Cooke and his associates were to have a half interest in each town site company. If the Franco-Prussian War had not broken out, Jay Cooke would have drawn German bankers in for fifty millions; but he had to look elsewhere in Europe for that sum. Promptly on the dot, Cooke had the five million dollars ready for construction. Then he began. We can look back now and say no road of two thousand miles — of which fifteen hundred miles were without a single settler — could pay seven per cent on each

unit of eighty-eight dollars debt; but once committed, Jay Cooke never hesitated.

He kept all his offices and branch offices so decorated with beautiful lithographs of the Northwest, of towns springing up like mushrooms, of yet unrealized settlers' homes ensconced in orchards, of wheat genuine enough and of a yield to make the East gasp, of rails shuttling across the great plains, of stock wading girth deep in pasture, of colonists trekking west in countless caravans — that the Northern Pacific territory became jocosely known as " Jay Cooke's Banana Belt." Advertisements appeared in all leading newspapers, dailies and country weeklies, from which no doubt the Northwest later reaped a profit. Editorials commended the loans and commended the enterprise. Army officers' letters, visitors' impressions, settlers' successes, were printed in pamphlets and showered on the world. Small savings from family teapots, profits from shop and factory opulent from the Civil War high prices, country banks' surplus moneys looking for safe investment, poured in so fast Jay Cooke's firm could hardly handle the rush. Yet never a charge could be made or proved that Cooke used that money for political corruption. That he had overdrawn his picture as the Northwest then existed, no one could deny; but the investors did not know that. It is a truism that most people investigate afterwards. That Cooke believed all he published and that later developments proved his faith founded on fact must be set down to his credit. Else he would not have staked his entire fortune on the venture;

but he had committed himself to pay that seven and three-tenths per cent interest yearly on those bonds.

Some factors he could not foresee. The Franco-Prussian War was one. The victory of Germany forced European buyers of Northern Pacific bonds to fling them back to American buyers in whirlwinds. They had to have money — real money at any sacrifice — and the high prices paid to Americans for goods of every sort during that war gave Americans ready money to buy those bonds cheaper than Jay Cooke's par; and those cheap bonds bore interest at seven per cent for Jay Cooke to pay. It didn't take much figuring to see that if American banks could buy Cooke's Northern Pacific bonds at twenty to thirty per cent off Cooke's price, they would buy them and leave Cooke with lots of Northern Pacific bonds unsold on his hands. Yet, during two years, he was pouring out money like water, for construction. Thirty millions' of bonds he had sold, and thirty million dollars he had poured out for construction, for advertising, and for interest on those bonds. The spring of 1873 muttered with rumblings of the coming crash. If Jay Cooke had not been dazzled by his own enthusiasm, there were things that he as a banker ought to have foreseen.

In the Civil War, paper money paid gold debts. Many a farmer and merchant got out from under a load of debt at that time by paying off loans and mortgages in paper worth half the debt in gold. If they had stopped there, they would have grown rich; but they didn't. Here came the Franco-Prussian War

with high prices again; and the American public plunged — plunged headlong in deeper debts for greater riches. Gold standards had come back. These new paper debts had to be paid in gold; and with the end of the Franco-Prussian War, prices and profits in America dropped like a stone. Men found themselves loaded with debts they could not pay. They either sold their Northern Pacific at a sacrifice, or demanded their "pound of flesh" in that seven per cent interest on bonds now sinking in the market. All the summer of 1872, constructors on the Northern Pacific became aware that the money from Jay Cooke was coming West slower and slower in smaller amounts; but "the big group" had such unbounded faith in the firm which had pulled the Civil War through tighter places that no shivers went down their spines till Cooke appeared before them in person, in August of '72, and told them frankly the country had ceased buying Northern Pacific bonds and they would have to raise on their individual credit a loan to go ahead. President Smith was asked to resign his twenty thousand dollar a year position as president. Whether, when they went home that night, the bankers and rail heads also began to feed out to an overglutted market the Northern Pacific bonds they had picked up at bargains, we don't know. They would hardly have been human if they hadn't. One thing we know they did not do. They did not tell the public; but the public — or the thoughtful part of it — could read signs for themselves. Falling prices for the bonds meant one of two things, financial juggling

or trouble ahead. Of course, disgruntled small investors thought it was just another Wall Street trick of the inside ring gambling up and down. Wise heads jumped out of the sinking ship, swam ashore, and waited.

General Cass of Michigan and Ohio came in as president. One wonders how he had the courage. He was out on the Pacific Coast with Ogden and Billings and others of the group picking Tacoma as a terminal when he was called East. Cooke did not go down supinely. He did perhaps the only thing we can consider dishonest. It is not now "openly" permitted on the Stock Exchange. He kept his brokers on the floor executing "wash sales." That is, one set of traders would offer one hundred thousand Northern Pacific bonds; another set of traders would buy ninety thousand "to keep up the market." Presumably gulls bought the other ten thousand; so the volume continued to seem large, and the public were duped in quiescence. One wonders whether dreams would have turned to a nightmare had they known that at this period Cooke had to call on his big group to put their hands into their pockets and "hold up the market." It all brings up the contention of Professor Ripley that honest investors in any rail property have a perfect right to know exactly what directors are doing with that property. Through this dire stress General Cass piloted the trembling ship till he had to assume the receivership for a bankrupt road in 1875; but the story hadn't yet reached '75.

Jay Cooke never deceived his associates. That can

be said of few men on a sinking ship. Those who knew him intimately said he always considered that " the big group " had failed him. He did consider that they had built with reckless speed and all the extravagance that goes with reckless speed and that they were thinking more of a quick turnover in Wall Street than of the prosperity of the line; but as he had bound them, so they had bound him, to pay " the last pound of flesh."

Government revenues were piling up. Public debts were going down. Mills were running full blast. Trade was buoyant. Only the farmers of the Granger states were grumbling, and Wall Street said they always grumbled anyway. When times were good, farmers wanted rail rates reduced because the rails were prosperous. When times were bad, farmers wanted rates reduced because they were hard up. " Let 'em grumble," said Wall Street. " On with the dance." The dance went on to September. On the seventeenth of that month, for some reason, stock margins began to melt like snow in sunlight. " Wildcat " rails were blamed. The very best and soundest systems in the country went off twenty to forty points in a day. Then on September 18, Jay Cooke closed the doors of his banks. He could not meet the interest on the Northern Pacific bonds. The reaction was as terrible as an earthquake rocking the foundations of the world. Men couldn't believe it. Jay Cooke! As impossible as the collapse of the Bank of England! Hundreds of thousands of employees in every walk of life were laid off in a week. Gloom became panic

fright — blind animal terror. Banks, little weak rails, trust companies, factories, public works stopped. "The rush to the Stock Exchange was so great it was feared galleries would collapse." Down went thirty banking houses in New York within twenty-four hours, followed by eleven more allied financial concerns in three days. The Stock Exchange shut its doors on the twentieth. Men had been fighting in the streets to withdraw deposits from banks and trust companies. In a night, a lifetime savings had been destroyed as if by fire.

A panic is an ugly thing at any time. The panic of 1873 was the worst the United States had ever known. Cooke sold everything he owned to meet his obligations — his beautiful residence in Philadelphia, his summer place on Lake Erie, his works of art, his yacht, his carriages, his furnishings, and retired to a small cottage near Philadelphia. In a story under a thin disguise, his life in that cottage is told. Either his daughter or his wife stood at the gate of the little cottage to welcome home a man broken in health and in spirit. She met him with neither pity nor reproaches. She had a sprig of roses in her belt and Cooke walked up the little garden path to a haven of peace and love. The collapse was never mentioned. There he regained his nerve and his poise and his indomitable courage and bethought him of a silver mine he had forgotten in the turmoil of the terrible years. He was then past middle life. He reopened his offices on South Third Street and succeeded in selling that mine for two millions. The disguised story may

be somewhat embellished, but it is in the main true of Cooke; and I have often wondered how much that silent partner had to do with his amazing recovery. It was testimony to the basic integrity of the man that he did have the business confidence of his associates sufficiently to get back on his feet and finance a genuine mine. Whether the mine was up on Lake Superior where he had bought interests before he went into the Northern Pacific or out in Nevada, I do not know. Up to 1875, " the big idea," like a dragon guarding the gates to a paradise, had slain every man who tried to pass it. Again, I ask as we asked Van Horn, why did they try it?

But if there had been no Jay Cooke and no Northern Pacific, the panic of 1873 was as inevitable as the hand going round a clock. The stench of the Erie was at its height. Investors were losing faith in all rails. They were " jumpy." Men who thought themselves rich in land found themselves poor, swamped with land. They couldn't sell without losing all, and they couldn't hang on without going deeper in debt. Prices had fallen for all they raised. A grasshopper plague had swept from Kansas to Manitoba. Drought years, debt, depressed prices, gambles in farming for quick returns, blasting the hopes of one generation; the rapid growth of the Farmers Granger movement from a few lodges in 1867 to 1,600,000 members — boded ill for prosperity in a land where the greater proportion of people were still producers from the soil. Rails had been notoriously built faster than population could support them west of the Missis-

sippi. Eastern management continued blind to the real situation. Editors in the East were too easily influenced by purely Eastern sentiment. Such men as Bayard Taylor and Dana were misled because they were chaperoned in rail excursions purely for the purpose of maintaining optimism. They did not go off by themselves and sound out true values. If they had, it is doubtful if their superiors would have believed them against the testimony of the most powerful bankers in the land, who were afraid to see and accept the truth. Hadn't everyone predicted a collapse after the Civil War and it hadn't come? Pshaw! One more turn of the wheel, and business would be on the up grade in a whirl. Men believed what they wanted to believe and they didn't want to believe that prosperity could pause or plunge. The pyramid of hopes grew wider and wider at the top and the foundation of real values shrank narrower and narrower at the bottom. It is an old, old story and will — I suppose — repeat itself as long as human nature is human nature.

First the crest, then the trough, but always the tide sweeping onward; and when storms break little care of tide for the craft engulfed. The Northern Pacific chanced to be a big spectacular wreck. That is all.

AUTHOR'S NOTE

Since writing the necessarily abbreviated account of the Northern Pacific and the crash of 1873 from such ample records as Folwell's three-volume *History of Minnesota,* Noyes' splendid *History of Finance,* and other financial histories of the period, as well as from Smalley's official narrative of the Northern Pacific, I found in another section of my personal files one of Jay Cooke's own financial pamphlets of

forty-eight pages, gay in a modest frame of red, and setting forth the exact facts on which he based his faith. I haven't the remotest idea where I got it; but I have a habit of never letting anything pertaining to history west of the Mississippi get past me. I see from the price mark that it cost four dollars and a half — it is worth it. Compared to the modern promoters' tricks of the trade, it is modest; and what is more, it is absolutely honest. There isn't a fact set forth by Jay Cooke which hasn't been surpassed by realization. I can see why, on the ground of facts only, he got the backing of such solid men as Ogden of Chicago and Billings of California and Cheney of the famous express, and Cass and Felton and the rest. Why, then, were their hopes blasted in one of the most awful failures of the rail world?

First, because no one could foresee what the Franco-Prussian War would do to American prices for farm output.

Second, because Cooke miscalculated the real value of the land grant of fifty million acres. Because the Illinois Central land grant had sold in certain sections up to ten dollars an acre, he figured that the fifty million acre Northern Pacific land grant — "equal in area to six New England States, large as Ohio and Indiana combined, room in it for ten States large as Massachusetts . . . seven times as large as Belgium" — would some day be worth five hundred millions and even at two and a half an acre would much exceed the cost of the Northern Pacific, put at from eighty-four to one hundred million dollars. It is worth that to-day; but that total did not accrue to the builders of the Northern Pacific. The Northern Pacific had to sell at what the grant would bring at the time; and when Indian wars and the collapse of farm prices stopped all land sales, the Northern Pacific had not the funds to go on. The people who did buy at two and a half an acre and could stick through the collapse were the people who got the increased values of that grant up to ten and fifteen and one hundred dollars an acre, and in the case of timber limits as high as thousands an acre. As we know now, much of the land grant did not net the Northern Pacific $2.49 an acre; and out of that had to be deducted the twelve per cent paid to Jay Cooke; and out of the twelve per cent Cooke had to deduct his tremendous expense of offices all over Europe and "shaves" and "splits" to brother bankers who floated his bonds.

Third, and most important of all, Cooke was a nonstop dynamo of nerves and drive till he smashed his own physical powers, and like all office men did not realize there are certain constitutional and time limits to all colonists flocking to new, hard frontier life. The spirit may be willing, but the flesh is weak.

The frontier is a land of youth for youth. Let the head of a growing family go in during his twenties or thirties; he can adjust himself to hot climate or to cold climate. If drought comes, he can bide his time till the cycle of ample moisture returns. If prices collapse, he can again bide his time. Let him stick it out for twenty years, and surely as the sun rises and sets, by the time he is fifty, he will find "Nature ever faithful is to such as trust her faithfulness." He will be on easy street,

amply able to ease his pace or retire on his life work. But suppose he is fifty when he goes in and then meets a succession of hot dry years, or cold long winters, or collapsed prices. The man of fifty is declining in his powers of resistance, of speed to beat a short season, of hours at toil long as daylight lasts. If he forces himself, he snaps. If he mortgages his buildings till the return wave of prosperity comes, he may waken in his sixties to find the mortgage has pulled the skids from under him and he is homeless too late to recover. All Cooke says of grain yields in Minnesota and the Dakotas is true. All he portrays of Montana ranch lands and the Inland Empire grain lands and the perfectly fabulous yields of lumber wealth west of the Cascades — have been surpassed by realization; but it took twenty-five years to bring that realization to pass; and the man past fifty can't wait twenty-five years. It was the human element that Jay Cooke missed in his calculations. It brings us back to one of the great essential lessons from rail's progress — the human element. The man behind the machine — whether the machine be financial or mechanical — is the driving power to success or failure.

Chapter XXVI

James J. Hill And The Great Northern 1873–1913

WE left the Northern Pacific a wreck, but this road was not the only victim of the great crash. From 1874 to 1877, over twenty thousand miles of rails went into the receivers' lap, among them our old friends the Erie, the Long Island, the Chesapeake and Ohio, the Union Pacific, and about one hundred fifty others. Neither bankruptcy nor receivership followed immediately on the crash of 1873; but both were inevitable. Besides the thirty-seven millions of bonds sold by Jay Cooke, unpaid debts on construction brought the total up to forty million dollars. For this the Northern Pacific could show less than six hundred miles of road. No use giving the names of Northern Pacific sections in running order, for all have changed names two or three times since 1873; but roughly they ran east from the Upper Mississippi to Lake Superior at Duluth, north to the Canadian border, and west as far as Bismarck, North Dakota, besides a road and river navigation company up the Columbia to Portland and The Dalles. Where falls and cascades broke the Columbia, the rail line counted on acting as a relief highway; and this section of the Northern Pacific, curiously enough, promised the best immediate freight returns; for between Walla Walla and the Pacific were more than one hundred thousand people producing grain demanded from California to Sitka.

Granting that of debts amounting to forty millions piled up by the Northern Pacific, the defaulting bank got twelve per cent and the road only twenty-eight million dollars, that was a lot of money for less than six hundred miles of rails and very poor equipment at that. It averaged over forty thousand dollars for every mile of track in more or less good running order. This total per mile would not have been too great for the Boston and Albany, or New York Central, or Erie, where costly terminals had to be bought, and the mistakes inevitable in first efforts had to be corrected, and construction up the Susquehanna and Delaware was difficult — yes, and in three different legislatures greedy political paws were out to be "greased" before the opposition of turnpike and canal could be pacified; but there was never any hint of political bribery in the Northern Pacific crash of '73. The terribly costly building across the Rockies had not yet begun. How had the "big group" behind the Northern Pacific managed to get away with forty thousand dollars a mile? Had they played with "marked dice" for personal gain? There was always that suspicion in the public mind. You will find it in local annals; for anyone knows that in those days a road on the flat prairie could be built for from eight to twelve thousand dollars a mile, and then with better equipment, as revenues came in to foot the bills, still keep the road costs to twenty thousand dollars a mile. Central Pacific had done so. So did Harriman in the wrecked lines he picked up and rehabilitated. So did Hill without a cent of govern-

ment aid and with no aid of land grants except such few areas as he bought from the bankruptcy court when the Northern Pacific went to pieces. There were over eleven thousand bondholders when Jay Cooke failed; but somebody must have picked up a lot of those bonds flung back by European investors after the Franco-Prussian War. You will meet one of those " somebodies " in a moment. He was James J. Hill, at the time a nobody in the financial world.

But keep clear in your mind two or three points or you will get lost in the financial web.

The default of interest on bonds existed as an obligation against the Jay Cooke firm.

Though Jay Cooke could mortgage the Northern Pacific and its lands, he could mortgage the land grants only as they were patented; and the land grants were patented only as the road was built, inspected, and passed by the government engineers.

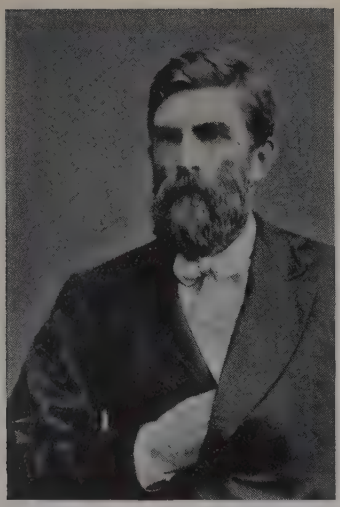
There and there only lay the hope of putting the Northern Pacific back on its legs, or rather its wheels, of building to go on and earn the rest of the enormous land grant.

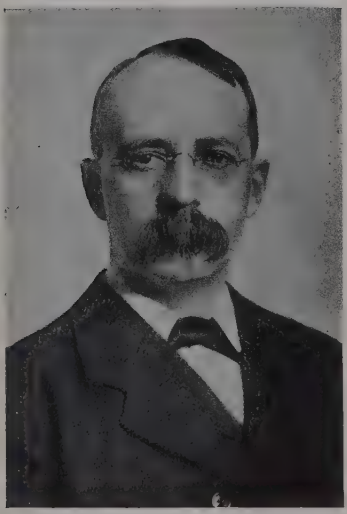
Two great problems confronted the successor to Cass as chief director of a bankrupt road — how to save the bondholders from loss and how to go on building and earn the land grant. The successor was Frederick Billings after whom the city in Montana is named; and it is a name honoring the place. When the load fell on his shoulders, Billings, a Vermont man, was about fifty years old; but he had lived for years in San Francisco and knew every mile of the

West to Puget Sound, and he also knew the value of the Pacific Coast lumber lands. He knew that some very important coal lands had been discovered in 1875 along the projected line of the Northern Pacific through the Cascades and the Rockies. Here was traffic and saving in fuel supplies if the backers, who hung on, could only push the building ahead to get lands patented.

Billings' plan was a device often used to-day, but not general then. It was subjected to violent attacks. Angered at the collapse, blaming in blind fury Jay Cooke for losses, groups were demanding the cancellation of the land grants to the Northern Pacific. All that prevented those groups stampeding Congress was the fact of eleven thousand bondholders from Maine to Texas, who put pressure on their representatives in Washington to give the Northern Pacific a running chance to reach its goal instead of jail — to which the thoughtless would have relegated wreck and wreckers — and to save the colossal loss to eleven thousand innocent buyers of bonds.

Billings' proposal, adopted after slight changes, was that the capital should be divided into fifty-one millions of preferred stock and forty-nine millions of common. Let the bondholders exchange their bonds for preferred stock. The preferred stock was to bear eight per cent instead of seven and three-tenths. There were two years of unpaid interest, and the revenues would hardly bring in interest for three more years; but ultimately the bondholders would and did get four hundred dollars for every thousand





These four men were among the most prominent figures in American railroading during a half century. In the upper left-hand corner is General Dodge, a pioneer of the West celebrated for his wide knowledge of the Indian problem. To his right is a photograph of James J. Hill of the Great Northern in his late years. At the lower left is Edward Harriman, to his right is another of the pioneer railroad men.

This modern locomotive giant rides the rails on sixteen wheels, eight of them drivers. It is as long as a third of an ordinary city block, travels sixty miles an hour, and can haul over one hundred cars for freight.

Before the days of electrification, confusion, smoke and noise characterized the old Grand Central Terminal station in New York.

dollars they had put into bonds. This would leave over eight millions of preferred to finance the Northern Pacific's immediate needs. The forty-nine million dollars common stock would produce no dividends till the preferred holders got theirs. On the ground that the original " big group " put up very little cash except (1) for surveys, (2) charter expenses, (3) predecessors' debts, (4) " to hold up the market " in Cooke's frantic financing — this may have seemed pretty generous; but the road had still to be completed to earn lands before the lands could be sold. It was the best plan to which Billings could get almost universal assent; and it went through. How much the original " big group " stood to the good, I have never seen even guessed at by any critic living or dead; for in 1893, the Northern Pacific crashed again; and in that twenty-year period Northern Pacific preferred bobbed up and down on the Exchange at twenty to thirty dollars a hundred dollar par share, and common at anything down to a dollar and a half and nine dollars. Uneasy lay the head that wore a railroad crown. The crown might be a martyr's golden halo or a target for enemies' potshots.

Billings cut salaries to the bone. He paid contractors' debts up to almost six million dollars and got rid of the interest arrears that were piling up. He rushed construction with just two watchwords — economy and caution. He did more — like Ripley later on the Santa Fé — he sloughed off all subsidiary lines and projects, such as town site companies, which were not then revenue producers. If he hadn't, he

would have been criticized as a speculator; but when he did, and some of the properties then utterly worthless later became great revenue producers — he was criticized for the sacrifice. One of the sacrifices became the Great Northern. Another included some of the great ore properties on Lake Superior. Yet another, the line and navigation company on the Columbia. Others were town site properties. But he hung like a bulldog's teeth to the timbered land grants and the coal lands, which have become of greater value to the Northern Pacific than its original capital of one hundred million dollars. Lateral feeders he flung out wherever there was revenue to be garnered — down to Benton and Great Falls, into the mining sections of Idaho and Montana, up the Willamette past Portland, and south through Oregon. All this he could not have done had he been purely a bank manager living in the East; but he knew the West from bedrock to mountain peak. He knew that you can't " break a line " that depends for revenues on everything man needs from timber and coal to grain and beef. Congress had granted an extension of the charter time to earn the land grant. By the early eighties, the amazing recovery of all the Northwest from the crash of '73 had brought a second tide of colonists with land values jumping from two dollars to four and fifteen; and this brought behind the Northern Pacific such new powerful banking firms as the Laniers, Drexel, Morgan, Belmont and others associated with it to this day. It was in the sloughing-off period that Henry Villard, the German journalist and financier

employed to protect the bondholders of Holland and Germany, gained possession of the Oregon Railway and Navigation Company, and as the Northern Pacific stocks and bonds slumped, he used the revenues of that venture to buy control of the Northern Pacific. There is a big story in Villard's daring coups; but it can only be touched upon here. If the market had known what Villard was doing, the price would have run up against him. He did not depress Northern Pacific stock. He didn't need to. Investors had wearied of waiting for dividends on common, so Villard called on friendly bankers to put up eight million dollars for a secret rail project of which he gave them not the faintest inkling. If he had, they would have bought against him and exploded his plan. This was in February, 1881. By April of 1882, Henry Villard had at his command twenty million dollars and control of the Northern Pacific. The last spike was driven on September 8, 1883, at Gold Creek in Hell Gate Canyon.

During all these ups and downs of a bankrupt line, what had happened to the territory along the steel pathway that crossed the Northern Belt of the United States? Pig's Eye, with a population of perhaps three hundred squatters, had become St. Paul with seventy-five thousand people. St. Anthony at the Falls had grown from five thousand to as many as St. Paul. The Twin Cities to-day number near a million. It cannot be said that the almost dozen rails now centering in these cities built them; but the steel rails did make possible the industries that built the cities.

Duluth on the Minnesota side of Lake Superior and Superior City on the Wisconsin side grew from little fur-trade portage points to cities to which, by 1882, there came yearly almost six hundred steamers and three hundred sailing vessels. The forests of Eastern Minnesota built the homes of settlers from Western Minnesota to Eastern Montana. Nor can it be said that the rails found the vast deposits of gold and silver and copper in South Dakota and Montana and Idaho; but the rails made it possible for the miner to get his ores out and his supplies in. There are mining companies in each of these states whose capital far exceeds the capital of Jay Cooke's "Banana Belt." Also — the annual wheat crop alone from the four wheat states exceeds poor Cooke's "Big Idea." As for the two big Pacific states — Washington and Oregon — the doubts and jeers and sneers of the pessimists of 1873 and 1893 leave us wondering how faith in a big idea ever makes any headway against stupidity and ignorance and blind antagonism. The population of the four largest cities there — Spokane, Seattle, Tacoma, Portland — now exceeds a million and a quarter people; and these cities are only the hubs of wheels radiating to larger areas of support from grain farm, timber areas, fruit lands, mining sections.

To go back to the dismembered ruins when the Northern Pacific found itself over the precipice in the smash of '73, one of the sections which had to be sold under foreclosed mortgage was the St. Paul and Pacific, which had two forked lines unfinished. One

ran north to the Canadian boundary, the other was working west to the Dakotas. These were wonderfully arable belts. Recall my own childhood impressions of them ten years after the smash. They were what are called "the wheat gardens of the Red River." Recall also how a Mr. Hill and a Mr. Stephen and a great archbishop drove out in a buckboard to size up the real value of rail lines, which might not aspire to reach the Pacific but only to proceed link by link as revenues came in from settlers.

Hill, a mere lad of eighteen, had drifted from Ontario, Canada, on the great waves of immigration that swept westward in 1856. He had worked at whatever his hand found to do till he became a coal and wood merchant on his own account; and the coal and wood business was a mighty paying venture in a land of cold winters, when people were tumbling in like wild mustard to multiply a thousandfold each succeeding year. Hill's quick turnover of ready cash gave him capital to jump in another venture equally profitable. By 1870 it was cheaper for the great Hudson's Bay Company of Fort Garry (Winnipeg) to get its supplies in by way of St. Paul than by canoe from Montreal over Lake Superior or up Nelson River from Hudson's Bay. Mr. Hill now put his capital in boats to run down Red River to Winnipeg. He was sure of full cargoes of supplies going north and equally sure of full cargoes of furs back up Red River. To be sure, Red River was open only seven or eight months; but then furs came out in spring and supplies could go in only in summer. Especially was he sure after

he met Donald Smith, the commissioner of the Hudson's Bay Company. Hill's fortunes had already mounted to one hundred thousand dollars before he was thirty. Now one hundred thousand dollars in the late seventies and early eighties was as much as a million to-day. Then along came rails — rails on the bargain counter of a bankruptcy. Hill jumped to the chance like a trout to bait. It was a tremendous risk. Jay Cooke, the strongest banker in the United States, had smashed in such a risk. What could Hill do with his one hundred thousand dollars, where Cooke with his forty millions had failed? Would you have risked it? If he had failed in his judgment, with Smith and Stephen backing him, he might have dragged down the Bank of Montreal and he would certainly have given the old Hudson's Bay Company an earthquake shock; but Hill's judgment was cooler and surer than Jay Cooke's. He was on the spot. His idea wasn't "the big idea." It was to make the thing pay for itself mile by mile as he had built his own fortunes from the ground up. I have heard old settlers tell how he had a tough job convincing Norman Kittson to come in at all before he got Smith and Stephen. Kittson wasn't exactly discouraging, but he wasn't looking for trouble. He was convinced, but he didn't take fire. Hill was very economical in his personal expenditures. He used to take his meals at one restaurant. Kittson dined well — as all fur magnates did — at a more expensive house. Quite by chance Hill used to encounter Kittson coming out full fed and satisfied with life generally, and the two would pace the rest of their midday

hour talking. Hill did the talking. Kittson listened. One would give a good deal to have the record of those midday walks and talks. We know the upshot. Stephen and Smith came in with the help of the Hudson's Bay Company and the Bank of Montreal to buy that wrecked St. Paul and Pacific, later to be known as the St. Paul, Minneapolis and Manitoba. Hill was manager in 1879, but as revenues came in and his wealth increased, he bought more and more of the stock and in 1883 he found himself president of the company now known as the Great Northern. That was the period of which Van Horn talked when he said Hill and the rest of them could have quit rich there and then. Hill was then in the prime of life. If he had cared for money as an end, he had it and he had it to burn. Why didn't he quit? Why did he go on? I can no more answer than I can say why Lord on the Erie didn't quit, or why Jay Cooke ever began, or why Harriman gathered up the wrecks of '93 and made of them the great properties they are to-day. I don't wonder every writer of Western history takes refuge in the argument of Manifest Destiny. I prefer to take refuge in the blind faith that all men are tools in the hands of a Destiny higher than self. Of all the great rail builders, Hill and Huntington were the only two whose backs didn't break under the load of their own success or failure.

Envy ever loves a shining target.

So many whispers believed by countless people, so many lies circulated by blackmailers and stock plunderers who failed of their aims — have been cir-

culated and still circulate about the price at which Mr. Hill picked up the bonds and stock of the St. Paul and Pacific, that it is just as well to take the facts given under oath in the courts and proved in the courts rather than to credit rumors and gossip. I have heard men, tremendous admirers of Hill's ability, tell how in 1870 he took representatives of European bondholders out on trains over the bankrupt road, how he pointed out all its defects, the enormous outlay needed to rehabilitate it, how he used the worst engines he could find in the roundhouse and the most rickety cars he could find in the car shops, to discourage them and induce them to sell cheap; and my informants really believed what they were saying. So did I until I looked up dates. Now the damning thing about those dates is that Mr. Hill was not manager of those two bankrupt sections until 1879 when he and his Montreal friends already owned them.

On retiring from the chairmanship of the Great Northern's board of directors in 1912, just a few years before his death, Mr. Hill gave the whole story very succinctly. He hoped he "had earned the leisure to which every man is entitled." He was then in his seventies. He described the Great Northern solely as "an organic growth." He defined the crash of '73 as due solely to "lack of financial soundness." "The holders of securities in Holland were more anxious to recover what they could from the wreck than to put more money in. . . . My associates were George Stephen, Donald Smith and Norman W. Kittson. . . . We bought the defaulted bonds in March, 1878. . . .

The mortgages were foreclosed and the property bought in. The stock aggregated six and a half millions, the bonded indebtedness thirty-three millions. . . . The total capital was forty-four million dollars." The total completed lines did not exceed 667 miles. The lines had to be rushed to completion to save the land grants whose time limit had almost expired. The new St. Paul, Minneapolis and Manitoba began with a capital of fifteen million dollars and mortgages of sixteen millions. The total land grant earned is given as eight hundred thousand acres, value two dollars and a half an acre. In the boom of 1880 these yielded about two million dollars. The defunct charters which Hill picked up to adopt in the Great Northern carried with them land grants of less than three million acres; and these sold at a straight average of $2.49, according to the testimony of a rival road — the Illinois Central. At no time did Hill receive any salary as president. Revenues permitted the line to push through Montana by 1888, constructing an average of over three miles a day. Steamships were added for the Great Lakes in 1888 and 1889. In the latter year the Great Northern was organized to bind in " a compact whole the various properties that had grown too large for the charter of the old Manitoba."

I don't know whether Mr. Hill knew what his enemies called his venture up to 1889, but it was known as " Hill's Folly." Now for the court records: the famous excursion, when Hill was supposed to have shown off the line at its worst, was on a Sunday in

September, 1877, two years before he became manager. The Dutch took one year to weigh and decide on prices. The prices were, for the old bonds of 1862, seventy-five per cent of par; for the bonds of 1865, twenty-eight per cent; for the bonds of 1864, thirty per cent; for the bonds of 1868, thirty-five per cent; for the big Jay Cooke bunch of 1871, eleven and a half millions, thirteen and three-quarters per cent. To close the bargain, two hundred eighty thousand dollars was laid down in gold, the balance to be paid after foreclosure proceedings in each case within six months of the bargain, December, 1877. The difference between the date of the bargain with the Dutch representatives in 1877 and the completion of the bargain as given by Mr. Hill in March, 1878, was the time required to foreclose the mortgage. If Hill and his associates failed, the cash paid was to be forfeited and the property revert to the Dutch. One of the Dutch financiers put on record that he thought they had made a mighty good bargain with Hill out of a mighty bad business; for their stuff had been kicking about unsold up to 1875 on "European markets at five to eight and one-half cents on the dollar."

It was a good bargain for both sides. Only a Hill or a Harriman could have taken those wrecked roads and redeemed them. The distant investor couldn't. It would have paid those foreign investors to have engaged Hill at one hundred thousand dollars a year to take over and manage their properties; but if you had mentioned that yearly salary in an era when twenty

thousand dollars a year was cut off as a president's salary, the good thrifty Dutchmen would have expired on the spot. They fell for Jay Cooke's lurid advertising methods. They didn't understand this brusque river boatman's quiet way of making a job pay for itself. Besides, Hill's dinky little river steamer, the dirty shallow Red River, the empty fenceless prairies, the cluttered tar-papered settlers' shanties, must have looked blastingly disappointing compared to Jay Cooke's lithographs of shuttling rails and homes sequestered in orchard gardens and towns dotted over the plains like pepper on a potato. How did the rough unpeopled frontier look to bankers from a land where city lined canals cut through farms that were gardens and a thousand great ships bore commerce to world ports? I once asked an Englishwoman from the Thames how it all looked to her for the first ten years. She heaved a deep sigh. "Oh, I spent the first ten years wishing I was away and out of it," she said; and she was from the humble walks of life, not from bankers' chalets and European mansions.

The Dutch bondholders were as glad to get out of it all as Hill's group was to go in. It simply illustrates again the difference between the bankers' investments for profit and rail management for revenues. If the bankers had investigated half as thoroughly before as after investment, they could have averted losses; but they didn't. Neither could they have foreseen any more than did Jay Cooke what the Franco-Prussian War would do to all American bonds.

What, then, is the explanation of the amazing persistence of the misrepresentations as to the prices at which Hill and his associates bought the first nucleus of the Great Northern? Chiefly a lawsuit that for almost fourteen years dragged from court to court, up to the Supreme Court. One Farley had been appointed receiver for the section Hill bought. As receiver, his duty was to protect the investors. He contended that he had been the first man to interest Hill and show him how a great deal of money could be made by buying low from the bondholders. The Supreme Court held that, as his official position was to protect the investors, he could not be made a participant in any profits from betraying his trust; the defendants contended that, as he had not put up one dime to buy the bonds, he could not claim any share in subsequent profits from the management that restored the line; and the case against the Hill group met its final quietus. There is something both ludicrous and sad in much of this testimony. Kittson had never been keen. After Hill got him in by sheer force of his own powerful personality, Kittson was so afraid of losing all he had, that he offered to sell Hill his shares at twenty-five cents on the dollar. Hill hadn't the money. His fortune had all gone into the Great Northern and all his profits were going in after it. Kittson finally succeeded in getting rid of his doubtful investment to the Kennedy firm of New York at sixty cents on the dollar. His heirs lived to see that doubtful investment go up to two and a half times par.

Now to resume Mr. Hill's testimony from 1889 onward. There is nothing spectacular in the Great Northern's history. Hill hated and distrusted the spectacular and compelled his official biographer — Pyle — to tell the progress of his line almost in terms of finance, which is a pity; for there were fireworks enough in all conscience when he collided with another great banker, who investigated before and not afterwards. This banker was the infant son of a clergyman, who had left his family back in Jersey City, while he was trekking across Panama to California when Huntington of the California gold rush was swapping trades in peddlers' supplies across the same unhealthy zone. This banker's name was Edward H. Harriman.

In 1893 the last spike was driven connecting Seattle, the western terminus, with the Eastern family of consolidated lines.

Two or three factors subjected the Hill lines to criticism in their early years. He set out with two primary objects, which were sound, but the public didn't like those objects mainly because we are all selfish in our outlook. If Mr. Hill had taken the public as deeply in his confidence early in his career as he did later, much of that hostility could have been avoided; for, besides being selfish in our outlook, most people in a democracy appreciate we have to be fair in our dealing with the other fellow — or democracy will collapse. But if Mr. Hill had taken the public in his confidence earlier, he might have defeated his own ends and subjected every move he

made to the obstruction of blackmailers and the raids of gambling plunderers.

His two primary objects were to make revenues pay for progress and to keep faith with his shareholders and bondholders by giving them their share in dividends and interest; and from the time the Hill lines got under way in 1882, they never once missed a dividend, good times or bad times, and never once defaulted in interest on bonds. So far as I know, there are only two or three other rail systems in America with such a record. Not once were dividends paid out of capital account. Not once was interest on bonds paid out of anything but revenues.

But all this implied economical building and expenditures cut to the bone. The criticisms were that for ten years the trackbed was rough, the way stations poor, the sidings inadequate, the freight sheds not large enough. That criticism was true. Hill was making his line pay for its own improvements. The next criticism was equally true. For ten years the Hill lines subordinated passenger traffic to freight. Of course, it did. In sparsely settled sections, there was more revenue in freight than in passengers; but, on the other hand, people would have appreciated if told that the Hill lines were pushing feeder lines north and south to sections that would have been without any lines of revenue if all had been put into the long main line and North and South left without branches. If you look at the main line of the Great Northern to-day, you will see its many lines north and south make it look like the backbone of a fish.

OVERLAND BY RAIL IN A PULLMAN CAR.

In the seventies and eighties transcontinental travelers were more than grateful for the rococo luxuriance of the new pullmans with their plush seats and gilded woodwork. George Mortimer Pullman founded the Pullman Palace Car Company in 1867

But out of the revenues year by year came an improved main line — better bridges, longer sidings, more direct curves, more solid roadbed, heavier rails, more powerful engines, bigger freight cars, till the little engines and cars first used looked like child's toys. Where, in the eighties, a freight haul might consist of twenty cars behind a wheezy engine that became asthmatic on an up grade, by 1928 the very same line carried speedy engines with from one hundred to one hundred fifty freight cars of three times the old capacity. So of passenger service. Where we were grateful in the eighties for plush-seated cars with a tawny doily behind our heads, to-day runs the Oriental Limited with cars resembling the best accommodation in a city hotel. These luxury trains of all the modern rails are really fine hotels on wheels, but all this took time to get results out of revenues.

In 1899, Mr. Hill bought a big area of logged off land, a logging road and ore lands on the north shore of Lake Superior, for which he paid over four million dollars out of his own pocket. His object was to get ore traffic for the Great Northern and profit from the iron mines for his shareholders. The railroad was turned over to the Great Northern at cost, the ore land was turned into an independent company and distributed share for share to the Great Northern shareholders. At this period Eastern people began to sit up and realize a new light of stellar importance had come in the rail world. Great Northern shares were soaring among the highest of all rails.

The Panama Canal was then building. What would be the effect on rails? Perhaps the only mistake in Mr. Hill's forecast of the future was that, judging from the failure of French capital to put through the big canal, until it was well under way he did not believe it could be a practical factor in transcontinental transportation; but when it was self-evident that Panama would cut the Western World in two, Mr. Hill was one of the very first to realign his rail plans not to fight Panama, but to use it. By the Panama Canal Act, rails were forbidden to own and operate ships using the canal. The folly of that clause in the Act has only been equaled by the folly of early rail laws in the East when steel was compelled to pay rebates to canals for every ton of cargo carried during the open season for canals. American rails, whose taxes had helped to build Panama, must not link up with ships to use it. Foreign rails, whose taxes contributed not a dime to build the great canal, could own and operate ships using the canal and get all the benefits of cheaper costs on the free highway of the sea, which American rails could not. The animus of such folly in the Act was, of course, the muddy memory that rails had somehow beaten canals in the past and might hurt transportation through the great oceanic highway.

There isn't a better example of confused thinking in all American transportation. Why had rails beaten inland canals between 1828 and 1848? Because railroads were open all the year round. Canals were not. Because rails were shorter than water-

ways as the diameter of a circle is shorter than the circumference.

Did either of these conditions apply to Panama? It did not. The conditions were the very reverse of the early days. Panama was the short cut across the diameter of a circle instead of round its circumference. Mr. Hill's first false impression that Panama might "be a pond for lily pads" now gave place to the swift action characteristic of the man. He let neither lily pads nor grass grow under his feet. If Panama was going to divert traffic north and south, then he must have feeders north and south for his great belt spanning the North. I never look at a rail map of the United States but I see the Chicago, Burlington and Quincy, the Illinois Central, in fact, all the north and south rails as a quiverful of arrows, Panama Canal as the archer's bow, the curving rails east and west as the thong pulled taut, and then those north and south rails as the swift arrows shooting cargoes to a thousand targets.

That is exactly what Hill in 1901 prepared to do — get an arrow north and south to shoot from the bow of the Gulf of Mexico. To put it in terms of traffic, if anthracite coal were no longer to come trundling across the Atlantic to the Western rails, but was now going down to Atlantic tidewater, then round to the Gulf of Mexico and up to the Northwest that way; if such manufactured goods as heavy machinery were going to do the same through Panama in bulk; if California fruits for the Middle West and oil from Southern oil areas were going to slip through Panama

and come up to the Middle West — Mr. Hill was going to have a rail feeder to help them along.

There was another, a deeper reason for his move. The smash of 1873 had largely been the result of the fall in European prices for American products. The transcontinental rails had been built as the great arteries of that commerce to and from Europe. That was all right when the population of the country ran from forty to fifty millions and depended on Europe for a market; but here was a new America grown up in Mr. Hill's lifetime with a population of over one hundred millions, which would soon consume all its own output. In such a land, with absolute free trade among forty-eight different states, each a little nation in itself, with no tariff walls, with perpetual peace guaranteed by the Civil War which settled forever the question of secession — Mr. Hill could easily see that the day would soon come when north and south traffic would be as profitable as east and west, when the grain and the beef and the lumber of the North would trend south to be exchanged for the cotton and the sugar and the tobacco and the fruits of the South.

Let us pause here a moment. From being captains of a dinky little train along fourteen to twenty miles, as in the first ten years of steel's progress, do you realize that the rail president, conductor, and crew had now become officers in great imperial armies? From employing a few hundred men a year, as on the branches of the New York Central, do you realize the big lines now each had thirty-two, forty, sixty, eighty

thousand — or close to 1,700,000 people on their pay rolls?

This point needs emphasis; for it comes out again in James J. Hill's plans to link up North and South as well as East and West. Looking over the best road to serve his purpose, he picked on the Chicago, Burlington and Quincy. The Chicago, Burlington and Quincy had connections which later led to control of the Colorado and Southern. By 1907, the Great Northern, originating in the scrapheap of the Jay Cooke failure in '73 with six hundred miles of unfinished roads, had grown to ownership and rights in fourteen distinct companies 7,407 miles of steel.

But James J. Hill never forgot the Jay Cooke collapse. He knew his own day was drawing to a close. He wanted to protect his system forever from dispersion of stocks and bonds subject to speculative raids or bank collapses; so he formed his Northern Securities Company, to gather in its fold the Northern Pacific, the Chicago, Burlington and Quincy, the Great Northern, and their lesser lines.

It was while gathering the Chicago, Burlington and Quincy into his fold that he collided with as great a rail genius as himself — Edward H. Harriman.

Chapter XXVII

When Hill And Harriman Collided

1848–1907

DURING my life in the West, I witnessed only one tornado. I was coming home from school. It had been a day of heat doldrums, heavy, dull depression, which neither mind nor body seemed to resist. One's feet dragged and one's mind went blank. There was a curious sense that everything went suddenly fearfully still. I looked up. The calm atmosphere seemed charged — I don't know with what; but the filtered hazy air seemed to darken. There was a little puff of wind like the first spit of a rapid-fire gun and away to the north the black, looming, angry clouds began to whirl and wheel in a way that sent me home at a breathless scamper. I called others of the family "to come out" — something "queer" was the matter with that storm. Not a drop of rain was falling, but there was the mighty rush of an angry upper wind. Fortunately, the storm hit to the north of the city. A gigantic spiral was going up and up and up, black as ink, but it didn't seem to be going up the way other storms went up and came down. It was upside down, it whirled faster and faster, roaring like an aeroplane propeller, wider and wider at the top, higher and higher, switching its narrow tail end into a funnel. We got out a field glass. Then we knew. The tail was taking up in its swirl boards, shanties, turrets and cupolas of houses; and as the wreckage went up to the widening top, the air

blackened with dust. The throb became deafening. The whole thing seemed to gather up in the topheavy clouds, to swallow its own tail like a python, then — down came the debris in a crash. All was over in ten minutes. The sun came out. The cooled air rushed in to fill the vacuum, and the heat turned to normal summer atmosphere. All that saved the city was the fact that the tornado struck far out on the prairie; but the switch of its tail had cleared streets of waste paper, of loose shingles, and, on the outskirts where the foreigners lived, of chickens and chicken houses and wash lines and, I believe, some women busy at the wash lines were hoisted from their feet and knocked flat.

That tornado has always reminded me of rails' progress. So long as the spiral was broad at base and narrow at top, things were safe. Reverse the spiral. It still went up and on, but it swept into its wreckage every flimsy thing within range of the tail.

A rail line is never complete. The marvel in labor-saving invention to-day is to discard for a better invention to-morrow. The fence rail tied to chain couplings to keep cars going downhill from telescoping each other gave place to, "link and pin couplings," as I think we called them in our childhood days; but it seemed very marvelous to our gaping eyes when the brakeman in his striped smock dived between bumping cars and, as the iron snub of one car banged into the double iron plate receiver of the next, jammed a big iron pin through the snub and the two receiving plates and then hopped out before he

could be crushed. Once in a while he didn't jump out in time. Many a brakeman lost his life by the couplings not jibing on a curved siding, or missing shot with the iron pin, or clumsy moves on his own part; and many more wore bandages where a hand had been jammed or a finger lost. The brakeman was the hero of the train, to our eyes. I had one young brother who always insisted his smocks should be made in brakeman stripes, and out of a discarded sewing machine he built a miniature something, but we were never quite sure whether it was a threshing machine or a train; but I know there were battles royal between unappreciative small sisters and a brother who contemptuously said girls would never make good brakemen because they didn't wear striped smocks. I regret to add he did not go in mechanics because that was not the vogue at the time. No one could foresee we were going into a mechanical age, any more than the average person could foresee what rails would do in a century's time.

Then in the late eighties came automatic couplers, which I am not going to describe for two reasons. First, I am, as my brother declared, quite incompetent. Second, because they were later succeeded by a better device. In nontechnical language, every one knows that if you shove the end of a half circle into the end of another half circle, it will pull right out; but if you turn one half circle upside down and fishhook it into the other half circle it will lock automatically and hold and pull as strong as it is hard and unbreakable. That is the principle of the auto-

matic coupler; but it wasn't till 1889 and 1892 that it was made unlawful to use any couplers other than automatics. It was hard to get them universally adopted state by state from Connecticut in 1882 to New York and the West by 1892. No use having one car with the old "link-pin" couplers and another with the new automatics. They didn't jibe. The new coupler had a little snub. The next car bumped that little snub so it opened its latch. Into the latch thus opened, came the fishhook of the next car knocking up the snub and locking the coupling like two fishhooks. The brakeman didn't need to stand between two cars to be jammed to a jelly. He signaled the engineer, and the backing cars did the rest.

Similar improvements came in train lighting. The first lights were flare torches in sand pots protected by glass. Then came kerosene lanterns and gasoline and other devices until Lewis, of rapid-fire gun fame, came with his recent invention of lighting cars by generating electricity from the wheels of the moving train. Before that device could be perfected, it had to be preceded by films for the light bulbs. Whereas the brakeman used to run through the cars with a torch to light lanterns hung above the aisles, we can now press a button at the head of any car seat and regulate the little lights for that seat.

Or, consider the brakes. You recall how Slaymaker's bull tried odds against a tie in front of a descending engine, called "the cowcatcher." Such wooden brakes as wagons still use to drop in front of hind wheels on steep slopes gave place to buffer

brakes, when the brakeman had to run along the roof of the cars and twist a wheel that jammed down a buffer against wheels. You can still see them on old type cars. It was perilous work for both the brakeman and the train in icy windy weather. For years inventors had been busy on devices to make steam do the job; but rail men had been so pestered with inventions that wouldn't work when most needed — at high speed — that when the real inventor came along with a device that would work he could hardly get a hearing until he was almost hungry. George Westinghouse was born in 1846, and had moved to Schenectady where his father was in the machinery business. Rail development was in the very air. George worked at seventy-five cents a day to the time of the Civil War and came back from the war with an old head on young shoulders. He saw a bad head-on collision on the line between Schenectady and Troy. That set him thinking. He thought first of the buffer brake. Then he tried a chain brake running under the cars back from the engine. Too slow! Didn't act in time. The Swiss were using compressed air for drills through their Alpine tunnels. Westinghouse got his idea. Have the air pump driven by the engine. Have a compressed air reservoir. Have the air reservoir's pipe go right up to the engineer's hand. Have the air tube run back to each car. Have couplings connect the tubes. The engineer, seeing danger ahead, could throw his brakes against each car. If a train broke in two, the drop of the brake would arrest each car; but it took well on to 1880 for Westinghouse to get his devices

perfected and induce the rails to adopt them. It is clear that high speed from Atlantic to Pacific, engines of terrible pulling power, trains of one hundred fifty cars, would be impossible without the automatic brake. Westinghouse lived to see the growth of cities whose major industry was the manufacture of his brake system. He is one of the few inventors who lived to profit from their invention.

But the air brake would have been lame without automatic signals. On curves, an engineer could see only a short distance ahead. The first signals were flags or lanterns in the hands of the track watchmen, who patrolled each mile; then red disks on the top of poles, which many people to-day can remember. Telegraph, of course, helped enormously; but it helped only where there were men at each end of the wire, and an engineer on the alert. By putting a block signal system in at each division where the pressure of a button could throw up at each station an arm with the red signal of danger till a train had passed and left clear open way for the train behind or coming head-on, what with lights, brakes, and signals, nothing short of the man dying or going to sleep on his post could endanger the train; but few could foresee all this even in the late eighties and early nineties. Still less did we foresee the industrial revolution — *that the man with brains had now come into mechanics; and that the Master of Destiny henceforth would be the man with brains to direct the mechanics.* I don't know why we were all so blind or why, until the last twenty years, boys with brains were being

During the great " Erie War " Jay Gould's bodyguard encamped for the night in the offices of the company in the Grand Opera House building.

Confusion and desperation marked the ten minute stops for refreshments in the days before the introduction of the diner. This amiable exaggeration might have been inspired by any Western railroad station during a stampede for food.

piloted into kid-glove professions, many of them to starve because they had not been educated for a new age.

But there was a boy born in 1848 who did foresee and in his fourteenth year refused to go on with plans for a university education because he sensed a change to a new world. Perhaps the pinch of poverty in a genteel home made that sharp youth feel the time had come when book learning would not count against a topsy-turvy world of facts, where science had hardly yet co-ordinated learning with mechanical needs. He was too frail and abnormally short physically to jump into manual labor; but he knew somehow that book jobs were no longer paying jobs; and he got his first work as street messenger and "padshover" for a firm of stock brokers in New York, where he seems to have kept his eyes and his ears open and his mouth shut and to have wherever he went sheer quick, dependable qualities. He also seemed to recognize his own limitations and took every possible form of exercise from trainers — swimming, running, boxing, rowing, paddling, walking, target shooting — to build up his physical machine; and he forced his body to obey his will so sternly that it ultimately broke under the inflexible driving power of his spirit.

That boy was Edward H. Harriman. I can't find an iota of evidence that in brain ability he was above the average. In will, of course, he was an irresistible force, so irresistible that Morgan, a giant physically, could not believe "that little Harriman" could ever

go through with the giant forces he put in motion. His very physical littleness and quiet force antagonized Morgan as it did Roosevelt. As I read the story of all three lives — not in their biographies, but in their acts — I rather suspect that irritation was below the consciousness of both big men. When Morgan and Roosevelt crooked their little fingers in a gesture that signaled " come to me on the run," they couldn't understand why Harriman didn't run; and Harriman, who knew what *he* was doing and didn't care much what *they* were doing, couldn't understand why he should run. If he was right, results would take care of themselves. If he wasn't, he would try to get on the right course; and he never tried to swim against physical and economic laws. He didn't argue with facts and tear himself to pieces trying to fit facts to theories. I don't believe he had much use for theories. His school was hard knocks, which he took joyously without a whimper and used for the next mile ahead; but he had a heart as big and warm as his body was small and his judgment cool. I rather suspect that, too, came from genteel poverty, for genteel poverty makes a nature either small and mean or big and generous.

For instance, going to and from Trinity Parish School, Harriman couldn't help seeing a great many street arabs who never had a square deal in life. The gutter was their playground, the cesspools of city's vice their school, and a crime in the police court their graduating diploma as future toughs and criminals. He knew very well you could no more crook your

finger for those young urchins and semaphore them into the fold to become goody-goodies than you could trap a wolf and turn it into a sheep dog or rope a wild steer and turn it into a plodding ox. He knew you had to provide a wholesome physical outlet for those kids to build up their bodies. He knew their love for rough and tumble fights, though they did hit under the belt and gouge each other's eyes; but he also knew that inside the body must be a disciplined clean mind to direct it; and inside the mind must be a silver-clear spirit to keep the thinking from mud and slime and the gutter and all the rest so self-evident to anyone looking in their ferret eyes and pasty faces, complexions pimply from bad food and worse thinking. Before Edward Harriman was twenty-six, he was thinking along those lines. Before he was twenty-seven, he had heard of a Mission which could handle the girls all right, but couldn't handle the boys. I think his first attempt to rally boys brought him exactly three shy, half-shamed little male animals to see what "the white-collared gent" was up to. He gave them coffee and sandwiches and told them he thought they had better get together a real junior sports club similar to big athletic clubs for men in New York. That was a new approach for those apaches of New York gutters. Then he got his broker friends interested and within a year had rallied Russians, Italians, Hebrews, Hungarians, Poles, Greeks — the very human dregs of the Bowery — into the nucleus of one of the most famous boys' clubs in the world. I can't tell the story or even the beginning of

the story; its place is not here. Suffice to say that when Harriman died this club numbered some seven thousand members, with a clubhouse costing $185,000 which Harriman contributed personally, and had graduated from its ranks judges, Congressmen, aldermen, and hundreds of leaders in New York's industrial and business life.

Nor is there any use in sneering that charity was cheaper than justice and that Harriman did this later to salve a seared conscience. He didn't. He began when he wasn't worth a dime. He had lost all he had in one of the few foolish marginal speculations of his life. Later he set aside one of the greatest summer play camps in America for city youth, to which Mrs. Harriman has added till the Harriman Park is now world famous. Mrs. Harriman was another of Edward Harriman's amazing strokes of a fine heart and a clear head. She wasn't his cushion-tire from life's rude shocks — nor was she his shock-absorber. She was his partner; but this comes into the story.

To go back to his first job in 1862, he became messenger for a Wall Street house at five dollars a week. His sole capital, as he afterwards told an interviewer, was his pencil and his head. As a Wall Street boy he got to know a host of men then climbing — Ryan, the Vanderbilts, Jay Gould, a younger Astor, a Livingstone, a Fish, the Belmonts, the Cuttings, the Appletons, the Brooks', the Clarks, the Dodges, the Potters, the Jesups, the Trasks, the Schiffs. They liked him. They knew he was dependable; so, in his twenty-second year he borrowed three thousand dollars from

his uncle Oliver and opened an office of his own. First, he got little minor trades; but as he never made use for his own account, of the knowledge of who was doing what or why, he was trusted and his business grew so that he paid back the loan within a year. It was when his capital had grown that he made the first two mistakes of his life. By selling some coal stocks short on margins, he cleaned up one hundred fifty thousand dollars. That was mistake number one. If he hadn't been checked up hard, he might have gone on along destructive lines. In the wild gyrations after the panic of '73, he sold some Delaware and Hudson short. One of his own clients — an Astor — happened to want it; and when Harriman scampered to cover his sale by buys on the open market, he found Delaware and Hudson climbing so fast his entire profits were wiped out. He was never a bear on the market again in his life, but he learned a lot of the tricks of scoundrels playing the market from 1873 to 1880 and could read the signs of the secret moves with an uncanny eye from behind his large unrevealing spectacles. I think Harriman instinctively hated a destroyer, though he hated very calmly and coldly, which was much more dangerous than bluster and noisy drum-beating before action. When he struck a destroyer, he didn't need to strike twice.

From buying and selling on commission, he began in the eighties to buy stocks and bonds outright for a long pull up. He had met a Miss Averill, the daughter of a banker in Ogdensburg, and married her in 1879. Through his banker father-in-law he became

deeply interested in rails. There was a little thirty-four mile jerkwater road running down to Sodus Bay, on Lake Ontario, which didn't pay and was about to go in the bankruptcy court for the second time when Harriman persuaded an associate in New York to buy it in, reorganize, build an elevator, and put on good equipment. Still it didn't pay. Harriman offered to take it off his friend's hands. The latter sold gladly. Again Harriman improved it as grain and coal carrier for the Lakes. Then he offered it to both the New York Central and the Pennsylvania, as offshoot for freight. The New York Central were slow. The Pennsylvania took it at a good price. Mr. Harriman then took hold of a line to Lake Champlain, of which his father-in-law was president, and another line in Florida. Here he repeated the upbuilding process and got his " big idea," which had slain so many other men. He seemed to sense that, though the crash of '73 — during which he was in the thick of Wall Street — had thrown rails into disrepute with investors, now that population had caught up on rails and good crops were providing traffic and rails were still low in price and badly in need of repair and better building, the country was about to swing into another great rail revival.

One of the best rails in the country first caught his attention. It was the fine old Illinois Central now advancing down the Mississippi Valley to New Orleans. Stuyvesant Fish was a director and drew Harriman's eye to the growing possibilities of a line through such a rich area of four crops a year. Harriman's firm

BUILDING THE MISSISSIPPI VALLEY RAILROAD IN KANSAS.

The Union Pacific was really built under army discipline and no other construction ever surpassed it in speed. It was, according to old annals, "an anvil chorus" for six hundred miles through angry raiding Indian tribes

had sold its bonds; but foreigners were still shy of United States rail bonds, its stock sold low, and the "bear" crowd of plunderers were doing their best to push it still lower. Harriman let them push and used all his private fortune to buy all they offered. The "shorts" took fright, scampered to buy and cover commitments and up went the stock and up went the values Harriman held. Through a Dutch stockholder, Harriman was elected director in 1883. His aggressive policy as director can't be told here except to say it added one thousand miles to the Illinois Central. Old heads wagged — this was going pretty fast for an old conservative road that paid six per cent; but Harriman's policy was adding profits so fast he could now sell its bonds two and a half per cent lower than the Illinois Central could formerly sell bonds, and that saving shoved up profits. Whenever the interest on bonds fell, Harriman used to say, "This is a good time to buy money." He meant borrow it; but, of course, to sell bonds at a low price, he had to show his road earning traffic returns to justify security to long-time, timid investors. He had now gone out of the brokerage business. He couldn't be both the agent for other people's investments and an owner in the investments themselves. In other words, he couldn't shave at both ends, and therein he proved himself a wiser man than Gould. You couldn't plunge up and down on properties and at the same time build them up.

It was in connection with the Illinois Central that Harriman first collided with Morgan and then had to

sacrifice his friendship with Fish. Both experiences must have hurt Harriman; for he was very human. He had advised the Illinois Central to buy a line to Sioux City. Morgan held a lot of stock by proxy; but Harriman had bought fifteen thousand shares for the Illinois Central. Morgan never dreamed of the Sioux City road preferring as directors the Illinois Central crowd instead of his own nominees and when they put on the Illinois Central men, and then offered to buy out Morgan's proxies at eighty dollars a share — which was more than the rundown road was worth — it didn't improve Morgan's mood. He had to sell and he never forgave Harriman.

Fish now became president of the Illinois Central. Harriman was personally very fond of Fish but he didn't like his arbitrary actions as president without consulting directors. He didn't like Fish making changes in rates without advice of the practical general manager. It bedeviled and antagonized shippers. He foresaw that the country was going ahead pretty fast in prosperity in 1890 and he perhaps remembered what that had done in '73. "Our whole force should be *making and saving* money. . . . We can expand during the dull season." No "large expenditures now," he penned from a sick-bed in 1890. Retrench and sit tight — that was his policy.

We know that when the panic of 1893 did come, it swept in its vortex the Erie, the Baltimore and Ohio, the Reading, the Union Pacific, the Northern Pacific for the second time, the Santa Fé — in all one hundred fifty-six roads with a capital of two and a half

billions. Harriman, with his finger on the pulse of the money world, felt it coming. It wasn't, like '73, in any sense a railroad panic.

But Harriman had been applying buffer brakes to Fish's plans for expansion, though the Illinois Central never missed a dividend; and that probably irritated Fish. He began to act more secretively just at a period when secrecy was most unwise; for the Interstate Commerce Commission had been established, and all rails were under almost hostile scrutiny by irate losers on bonds and stocks. Gross earnings on the Illinois Central had almost tripled. What did Harriman, a banker, know about rails and ties and grades and bolts and spikes, anyway? But there was one thing Harriman did know about and that was sound finance; and there came the final violent break with a lifelong friend. It must have been a bitter blow. Harriman did everlastingly object to Fish depositing Illinois Central surplus funds in a weak Chicago trust company in which Fish was a trustee and from which he borrowed for other than Illinois Central ventures. Once Harriman out of his own pocket lent Fish $1,200,000 to cover that Illinois Central deposit then in jeopardy and told not a soul about it, but when Fish objected to the five per cent rate of interest charged, and then the same year deposited Illinois Central funds in another weak institution, the strained chain of friendship broke violently. Harriman then controlled twenty-eight million dollars of Illinois Central stock and after one of the longest and bitterest fights ever aired in the New York press

forced Fish out, in November of 1906. Harriman never told of his personal loans to Fish in 1903, till Fish's charges forced him to speak with proofs in hand. It was typical of the little man's cool indifference to public clamor until the defense of a great property compelled him to speak. Fish, no doubt, thought the two Chicago trust concerns perfectly sound until his own embarrassment proved his judgment wrong; but he had publicly charged Harriman with trying to throw the Illinois Central into the lap of the Union Pacific, which by this time Harriman was rehabilitating. Harriman produced his proofs that in behalf of the Union Pacific he had bought when low ten thousand shares of the Santa Fé, nineteen thousand shares of the New York Central, forty-five thousand shares of the Baltimore and Ohio. Was he "trying to throw" them, too, in the Union Pacific's lap? The charge was absurd. All this came out in the hearings hostile to Harriman before the Interstate Commerce Commission. Perhaps Fish believed his own charges. There was even great bitterness between the two families, now near neighbors on the Hudson. Mrs. Harriman was quiet, but like her husband a quiet force. Mrs. Fish was a great social leader and yielded first place to none. Such natures are constitutionally in antipathy. Neither understands the aims and mental language of the other. The farther they keep apart, the happier the relationship; but it created another bunch of enemies for "that little Harriman"; and that little Harriman was too busy and too near the end of his physical strength to care

one stiver if he had known. It was perhaps a mistake for Harriman to be so reticent under attack. It gave rumor a free field; but that was the way he was built and worked. That is all there was about it. "If the postman paused to kick every dog that barked, he would never get his mail delivered." A good rule but not always workable in a muckraking era, when the modern buccaneers were giving the muckrakers only too much in the way of ugly truths dragged from the slime of scoundrel finance. The good were apt to be spattered with the bad, as Roosevelt later pronounced.

To go back to Harriman's plans for expansion by building up, not tearing down — Harriman's great opportunity came in the panic of '93. Though the panic threw one hundred fifty-six rails in the bankruptcy of the junk heap, it was in no sense a rail panic. It began in Europe with the failure of Baring Brothers, who had loaned too heavily on South American projects. The failure was for over one hundred million dollars. That was a lot more money in '93 than a billion is to-day. European investors did not discriminate then as clearly between North and South America as they do to-day. In any case, they had to fling American securities back on the American market for any price; for gold Europe had to have to meet international accounts. This had two immediate effects — it kept gold draining away month by month to Europe and it sent the price of American stocks and bonds off not a few points a day, but in great slashes of six, seven, eight, ten, twenty points

till the Stock Exchange records began to resemble a toboggan formed by a series of hard bumps.

These two effects had again a double reaction in the United States. Gold has to be the international medium of exchange; for nothing else will all nations accept. The drainage of gold to Europe created "tight money." The currency of the United States did not seem sufficient to cover the needs of trade. The second reaction was that the fall in the prices of stocks and bonds scared out timid investors in the United States and accelerated the speed of the toboggan.

Proof that 1893 was not a rail panic is found in the fact that, though one hundred fifty-six rails went down in the wreckage, the number of commercial failures was three times greater than in 1873. Six mortgage companies, thirteen loan companies, five hundred fifty-four banks were in the casualty list. Even in the far Canadian West, two strong banks went down in the aftermath of the crash. Capital lost on rails alone is put at from two to two and a half billions. Add to that the other failures, and '93 left a devastated area in its wake.

Doubtless Harriman the banker sensed all these factors.

Now, as the warning on the subway stations says, "Watch your step"; for the factors crisscross and entangle.

The optimism of the eighties had increased speculation to a mania. Many millions had been lost in speculations. Scamps had built rails, particularly in

the Southwest, not because rails were needed but to speculate in town sites, in land values, in stocks — and then get out while " the getting was good," leaving the public holding a bag of debts or worthless bonds and stocks.

This shattered public confidence.

Then, all through the eighties, the output of Western silver had increased amazingly. Why not make silver the national currency by " free coinage of silver "? We all remember more or less vividly the eruption of " the silver-tongued orator " from Nebraska in the National Democratic Convention of 1896 describing hard times as " the crucifixion " of the people " on a cross of gold." Mr. Bryan was doubtless sincere, as he always was; but he ignored facts. The unlimited coinage of silver would have restored prosperity in the West. That was a fact. That was what he saw. What he didn't see, or what he ignored, was that foreign nations will *not* accept silver on a parity with gold. Also, in spite of the most magic phrase ever coined by an orator, the public in the United States, outside of the West, would not use silver coin. Try stuffing a twenty dollar bill in your pocket. Then try stuffing in twenty silver " cart wheels."

Other accelerating causes of the collapse preceding and following the 1893 panic were the fall in farm prices owing to the stoppage of European buying; the huge mergers of the nineties in sugar, lead, rope, oils, which simply could not pay dividends on " watered " stock, on worse than " watered " stock, on swindle stock; the rate wars among the railroads, which had

reduced revenue by a third, a half, yes, in one case two-thirds, far below the cost of providing traffic; and last the Coxey Armies of idle workmen marching across the country to demand work or keep, and levying demands for food wherever they passed.

Other influences infuriated the public. Rebates began by law in the Eastern States, the rails being compelled to pay the canals a rake-off. From that it was but a step to freight agents — " runners " — offering rebates or discounts to big shippers, against little shippers. The big shippers, especially, said they had to have those rebates to keep from insolvency in such hard times; but that didn't make the wrong to the little shipper any more right nor the bitter pill any more palatable. State regulations of rails had become a mania — a panacea for all ills. There were forty-eight different sets of regulations for rails, from rates to the length of bed sheets and towels. When the Interstate Commerce Commission had been established to unify all the divergent regulations, why didn't they act to curb and punish such glaring swindles as rebates and " watered stock "? Because up to that time, while the Interstate Commerce Commission could forbid this and that, Congress had not put teeth in the law to enforce and punish. Punishment in each case rested in the hands of the individual state where the crime was committed. I say " crime " advisedly. The swindle was a crime just as much as theft. The seas had been cleared of pirates. The steel rails hadn't been cleared of buccaneers. I think of an aged couple. They had invested all they had in a sound Southern

rail and retired at seventy years of age on what they thought were certain dividends of six per cent on stock and four per cent on bonds — surely not extravagant expectations. That Southern rail fell in the hands of buccaneers. The stock fell to eight dollars with no dividends, and the bonds to 60 and 70. The road was sold on a foreclosed mortgage. The wife was going blind in a cheap boarding house back room in New York. The husband at seventy-two was a floor walker in a cheap New York department store, where he couldn't possibly hold his job more than a few years. Was the jockeying that wrecked that road a crime?

Yet when the public looked to the individual states to punish such crimes, an unseen hand stretched out in the dark and paralyzed the courts. Sometimes it was done at the polls; sometimes, in the legislatures; and at rarer times, in the state courts themselves; and the little investor, already ruined, had no funds to fight such odds.

Now we come back to Harriman.

These things prove how true was his judgment in curbing the good old Illinois Central on all rash risks.

As a " commuter " on the Erie, he had studied it. When it went bankrupt in 1893, he held a few of its second mortgage bonds. When Morgan took hold of its reorganization, Harriman did not like the terms. Harriman's associates, Kuhn, Loeb and Company and Belmont, Peabody took the same stand. The lawsuit need not be detailed here. It upheld " that little Harriman " and increased Morgan's dislike. Harri-

man got out of the Erie, but his quiet victories had added enormously to the esteem in which he was held by other bankers.

In studying the big bankrupt roads now on the auction block, he was attracted by the Union Pacific. It was a Granger road; this is, it depended on the farm for its revenues. As farms came back to prosperity, so would the Union Pacific return to solvency. The whole question was, If he staked all he had personally, would his banker back him for the millions more required to equip the Union Pacific equal to the New York Central or the Pennsylvania? Harriman knew that along the Union Pacific were a genial climate, a two- and three-crop area, the beginnings of a great citrus industry, and the road would succeed if he could link up the Southern Pacific mines, oils, sugar areas and access to the Pacific Ocean with the Central Pacific.

Morgan wouldn't touch the Union Pacific with tongs. Kuhn, Loeb sounded him out because they did not want to antagonize such strong brother bankers. The common stock was selling below 25. Mr. Kuhn tells how when Harriman first began talking Union Pacific to his group, cold shivers went down their spines. " Worth two hundred in ten years and able to pay ten per cent? The wildest kind of talk! " Yet when Harriman had placed before them the facts behind his faith, they almost gave him a blank check. It wasn't through a magnetic personality either. It was facts, facts, facts which they could not gainsay or argue away. " Never argue with the market," is an

adage of Wall Street. "No," said Harriman. "Say rather — never argue with facts."

It was a big plan, but no bigger than the Canadian Pacific were putting through north of the border — better tracks, better equipment, shorter curves, connections with Asia and Alaska — and traffic would do the rest. The Union Pacific now had three thousand miles of branch lines. That was partly what had pulled it down. While the road could pay interest on its charges, its adopted family could not; and these branch lines had cost forty-two millions. When Schiff, the Kuhn — Loeb banker, went to Omaha to look over prospects, he was so anxious he paced the floor of his hotel room all night.

At this time Harriman laid the foundations of his own private fortune by buying Union Pacific stock all the way from 15 and 20 up. "Alas," sighed his banker associates, "that little fellow will come to grief yet." He did make millions out of his good judgment, but he made hundreds of millions for the investors who followed his lead. How Union Pacific was bought in at the receiver's sale for fifty-seven million dollars has been told. Then came the reconstruction. Here, the practical rail men got the jolt of their lives. Harriman didn't boss roads from an office chair. He had a special train made up with the observation car shunted ahead in front of the engine. With his two daughters, the president of the Union Pacific, the chief engineer, and the divisional managers, he went slowly over every mile of the Union Pacific by daylight. Notes were taken on grades, curves, rails,

ballast, engines, cars, stations, revenues for every division. As an example of those eyes behind big spectacles, divisional bosses still tell how he noticed loose spikes, rotting ties, boarded up car doors, bad roofs, " blistered rails," split rails that bumped, water tanks too small; and his questions were shot out at the bosses with the swiftness of a rapid-fire gun. When he stopped at little hotels for the night, he purposely brushed up against all sorts of people. What were they doing? Had a hard year? How long would it take to get out of debt? Shipping cattle, wheat, hogs, potatoes, what? Rates? What was their net? Yes, yes — many settlers coming in? What price paid for land? Cash or part payment? How about irrigation? Big thing — wasn't it? Yes, he believed that, too. Many people didn't know till afterwards that they had been talking to " the wizard " of Wall Street. He wasn't high-hat.

The first thing he wanted when he got back to New York was twenty-five million dollars cash — quick; and the second thing he asked was another twenty-five millions quick. To San Francisco, to Portland, to Butte, Harriman had made his inspection and he had more facts to bolster up his demands for every dollar. Do you know what he did when he touched Omaha going back? He wired for five thousand shares of Union Pacific for his own account, bought outright up to 66. And his family hold that stock to this day. It was not acquired as a speculation. It was bought as an investment. He had faith in his own convictions.

Improvements went ahead almost at the speed

Dodge had long ago built the first line. " Grading machines and dump-wagons were sent into the hills in train-loads. Steam shovels, the leviathans of the railroad camp, crossed the mountains in processions. They scooped the burrow-pits, cut the shale from the tunnels, dug the ballast, and loaded even blasted granite upon cars out of the rock cuts. Track-laying machines flung out rails on one side and ties on the other like sandwiches." At the summit the last hill was drilled and a tunnel eighteen hundred feet long was put through primitive granite. Here the Harriman engineers scaled two hundred forty-seven feet off the highest elevation at which the road had formerly crossed the continent; then came the task of getting gracefully down the distant slope of the hills to the Laramie plains.

In tunneling the Wasatch Range,

" the hole would not stay straight. The mountain reversed every metaphor and simile of stability, refused to remain in the same position for two days together. It moved forcibly into the bore from the right side, and then stole quietly in from the left; it descended on the tunnel with crushing force from above, and rose irresistibly up into it from below. The mountain moved from every point of the compass, and from quarters hardly covered by the compass. Workmen grew superstitious and engineers stood nonplussed. Starting in huge cleavage planes, the shale became at times absolutely uncontrollable. Wall plates well fastened into regular alignment at night, looked in the morning as if giants had twisted them. Twelve-by-twelve hard-pine timbers, laid skin to skin in the tunnel, were snapped like matches by this mysterious pressure."

By this time the Eastern press became aware of something tremendously spectacular taking place along the Union Pacific and when the Salt Lake cut-off was built a little later in connection with Central Pacific plans, the dailies were carrying specials with Sunday feature stories. Of course, Harriman didn't leave his huge expenditures on the Union Pacific as a debt obligation to be sacrificed in profits to the investors. To cover the costs of the Oregon Short Line, he issued twenty-seven millions plus more Union Pacific common stock. The capital of Union Pacific shot up from seventy-five millions preferred to one hundred millions, and the common from over eighty-eight millions to ninty-six. This was going it with a vengeance. One wonders what would have happened if Harriman's frail health had broken at this time. He lived to see his faith justified and his road with such surplus cash he could buy into the securities of other pay lines; so Union Pacific is now in the same class of investments as the Canadian Pacific, the Santa Fé and United States Steel. It is the tragedy of Harriman's life that in one other case, where he took such chances, he did not live to put back values in the road which he had loaded up with obligations.

In 1899, the first year of Harriman's complete control, the Union Pacific more than doubled its revenues. In another year, it had a cash surplus of twenty million dollars net and could pay a dollar and a half on common stock and four per cent on preferred. In another year, it was paying four per cent on its common. Harriman never ascribed this to his own

management. He ascribed it to two other factors — to improving equipment so it would do more work at the same labor costs: to the increased prosperity along the line; — and he was right. The 1902 traffic of the Union Pacific was almost double that of 1897. He had turned a bankrupt road into a pay road in four years. As a rail builder he has had no equal in the world except James J. Hill. By 1906, the Union Pacific was paying ten per cent on its common, and that twenty-five dollar stock was selling at 195. In the same period, shipping rates had gone down seventeen per cent.

As a holiday during this busy period, Harriman had equipped a steamer and taken the famous excursion to Alaska accompanied by the foremost scientists of the country. His somewhat explosive connection with a group of Southwest roads will be told in a separate chapter.

When Huntington died in 1900, Harriman had his chance to gather the Southern Pacific into his fold. He afterwards told how he did this to acquire the Central Pacific, whose story has been related. He accomplished this by issuing bonds against the Union Pacific to be converted into common stock, and such was the faith of the public in him that the public grabbed those bonds with both hands; and for every bond bought at one thousand dollars and converted into stock, the exchange stood fifteen hundred dollars plus stock. The Harriman rail family now comprised nine thousand miles of the best rail systems in the country. I remember being in New York at the

time Mr. Harriman arrived from a very quick trip he had made to Europe. A mob of editorial reporters stood on the docks. He came down the gangplank very slowly. " I can't talk to you now, boys," he said. " I'm all in." It is the only time I ever knew of Harriman saying " can't " in his life. The candle he had been burning at both ends from the time he was fourteen was now burning out. He ascribed it to seasickness. We now know it was not; but the flame flared up to great things before it finally flickered out. He helped San Francisco out of her awful disaster of earthquake and fire. He saved the Imperial Valley from destruction; and he had his great battle with James J. Hill.

Perhaps it was more a battle of Harriman the banker with Morgan the banker, than a battle of Harriman the rail builder with Hill the rail builder. Though Hill was a giant physically, tireless, alive to his fingertips and strong as a wrestler, there was much alike in Harriman and Hill. Both saw uncannily far ahead of contemporaries; had eyes that missed nothing; were mental wizards in figures; were demons for facts. Both had exceedingly kind hearts and led blameless private lives. Both drew to themselves helpers by a curious combination of deep fear and deep affection. I have heard the public curse both men; but I never met an executive of either man who didn't hold in his heart the deepest affection for his " big boss." I have heard secretaries, vice presidents, station agents, tell of being fired on the spot for some little carelessness, some delinquency, in little spend-

ings that mounted big in the aggregate, some faulty grading, some slip on this or that; but I have also heard them tell how they were taken back, when duly disciplined, and promoted as they proved they could do the job. Harriman's mule a minute is an example. His financial board received a telegram asking authority for a divisional man to buy a certain number of new mules. The board gravely discussed whether they should authorize so many mules bought. Harriman listened impatiently, then interrupted brusquely to say that if a divisional boss couldn't decide that question himself, the man should be fired; "for," he added, "my time is worth more than a mule a minute."

With Morgan, it was a case of temperament. When these two collided, there was a terrific crash and a stall. It was defeat for both. That was a pity. It threw the Interstate Commerce Commission off the track for twenty years. Those very consolidations were forbidden which to-day are authorized by law and advocated by the Interstate Commerce Commission.

The collision with Hill began very simply.

Hill had to have a line running north and south for reasons already told. Harriman had to have a line running north and south, too. Hill needed the line south just as much as Harriman needed it north. Both had to have the connections via Chicago for the Atlantic seaboard. Hill got the Chicago, Burlington and Quincy. Then Harriman began to look into the Hill family of lines. Right there the legal advisers of both men, perhaps I should say of both men's bank back-

ers, slipped a cog. It is an even wager that, if either Hill or Harriman had looked personally into that weak link in the chain, the difficulty would have been located; but they were acting swiftly and left details to their bankers; and their bankers, be it added, had employed legal advisers up to the number of five.

Please remember that the Northern Pacific had passed through two crashes, '73 and '93. Hill's bankers — the Morgans — had handled the reorganization of the new Northern Pacific, just as Harriman's bankers — Kuhn, Loeb — had handled the new Union Pacific. Both lines had been made into marvels of prosperity. That is to the credit of both bankers and builders. There was no rascality in either record.

The fight for control, now generally erroneously regarded as between Hill and Harriman, can be given very briefly, though it should be read in detail from the annals of the times by any little fellows who think they can play tricks in a big game and not get burnt fingers. If they are willing to take chances, that is their affair; but they must be prepared to be good losers. When Harriman first tried to get the Burlington, its stock stood below 140. It was worth that as one of the best lines in the West; but when under competitive bidding it began to climb towards 180, Harriman considered it out of line with its real value and his bankers became interested in bigger game. Hill didn't consider 180 too high, and when the Burlington would not sell for less than 200, he took their offer, adding the Burlington to his family of lines now under the fostering care of the Morgans.

Right up to this point, everything was done openly, half the Burlington being credited up to Great Northern and half to Northern Pacific. Mr. Morgan sailed for Italy. Mr. Hill went to the Pacific Coast. There was only one way Harriman could still get control of the Burlington for the Union Pacific. That was by secretly buying up control of the Northern Pacific stock. This was along in March and April of 1901.

By April 15, Kuhn, Loeb turned over to Harriman about one hundred fifty thousand shares of Northern Pacific common and one hundred thousand shares of preferred. They kept buying till Northern Pacific had advanced from 102 to 131 for common. A lot of Northern Pacific holders regarded that level as so high that they sold right into the hands of Harriman. It is told that on May 2, one of the Morgan clients felt so sure Northern Pacific was soaring too high that the Morgans sold for him ten thousand shares; and Harriman took it all. But there was one wise old lion on guard who didn't like his Northern Pacific turning over such tremendous volumes of sales every day. That lion was James J. Hill. He hated skyrockets and fireworks in rail values and, taking a special train from Seattle, raced to New York in the fastest time ever made from Pacific to Atlantic. Kuhn, Loeb were old friends of Hill's. As always, Hill went directly into the enemy's camp to see Mr. Schiff. No lies were told between the big men. "You can't get control of the Northern Pacific," Hill said to Schiff. "My friends hold forty millions and so far as I know, none has

been sold." "That may be," said Schiff, "but we're going to try."

Hill never took chances. He went straight across to the Morgan firm and had a cable sent to Morgan for permission to buy one hundred fifty thousand more shares of Northern Pacific "at the market." Unluckily, this was Saturday, May 4. Before an answer came back, Harriman's bankers had in all about seventy-nine millions of Northern Pacific stock. It made a majority of common and preferred together; but right there was "the little nigger in the woodpile" the legal advisers had missed.

On the first of January, the Northern Pacific had the right to retire the preferred for common, and that would give Morgan and Hill a majority.

This time Harriman took no chances. He was ill at his home, but called up Kuhn, Loeb to buy another forty thousand shares of Northern Pacific common "at the market."

It doesn't need to be told that on Monday, May 6, there were skyrockets. Of course, in a half day, Saturday, Kuhn, Loeb had been unable to fill the orders; but "the little pools," the gamblers whom Hill always called "the lunatic fringe," were in a double stampede. The "shorts" who had sold believing Northern Pacific would come down in an awful crash for them to buy in lower, saw Northern Pacific going up like a crazy balloon and rushed to save themselves at any price. The gamblers seeing Northern Pacific go up and up without any reason, dashed in blindly to buy more and cash in on winnings before the

smash; and the public — the fool public — chased what seemed to be the winning side. Meantime, Morgan's cable had come back to buy those one hundred fifty thousand shares for Hill. Up went the price 40 points in two days without rhyme or reason in such wild scenes as Wall Street had never witnessed before — up and up till some "shorts" were offering eleven hundred dollars a share to get out of their own trap.

Harriman stopped right there and then. Hill had his one hundred fifty thousand shares, but both sides knew they were in a zone so dangerous it might smash nearly every brokerage firm in New York. According to the records, the big fellows had quit at 150. It was the gamblers who precipitated "the corner." More Northern Pacific had been bought and sold — much of it on margins — than existed. Outside the big fellows, neither buyers nor sellers could deliver.

The big banks got together at once.

Northern Pacific went soaring for almost another week, though anyone reading the stock ticker record could guess that people and gamblers were flinging issues on the market at a loss either to get out of the Northern Pacific corner or to get in on a game of "loaded dice." United States Steel had fallen 22 points for no reason on earth; Santa Fé, 33; Delaware and Hudson, almost 60.

It was just a case of blind cattle in a stampede pushing one another over the precipice.

The big New York bankers lent enough to relieve the genuine brokers, as distinct from gamblers, till the big fellows could put their heads together and find

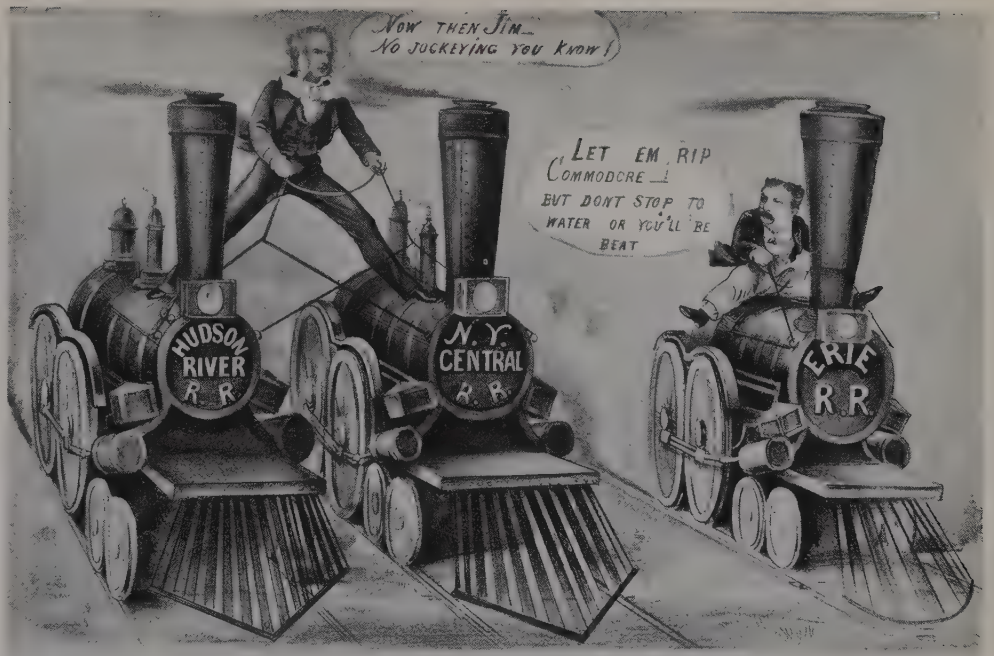
out where they stood. What they found out was that neither side had won. The Morgans and Kuhn, Loeb agreed not to call for delivery of the short-sold Northern Pacific shares. If Morgans converted all their preferred into common in January, they would be up against litigation by Harriman. If Harriman, by virtue of his holdings, forced earlier action to forbid change from preferred to common by the finance board, he would be up against lawsuits by Morgans. Both sides could quit without "tearing up Wall Street." Because Morgans had not bought above the real earning value of the Northern Pacific, they could quit without loss. Because Kuhn, Loeb could sell at the real value of Northern Pacific far above the price first paid, they could quit with profit. I do not quote the long conferences and tables of figures. They can be found in the lives of Hill and Harriman; and they agree. The arrangement was not fully worked out until well on in July.

Meanwhile, Wall Street and the country in general had time to get over an attack of nervous prostration and digest some wisdom from the experience; but the lesson to both Hill and Harriman drove home the fact that for the future protection from mad raids they must consolidate their respective families of lines into securities that could not be raided. Hill had his Northern Securities Company incorporated by November. We know how they were attacked in March, 1902, in a Federal suit which was taken up to the Supreme Court. In 1904 the court ordered such consolidation dissolved. This also hit Harriman's rail

group of Union Pacific and Southern Pacific. Later acts compelling one line to divest itself of holdings in other lines are doing much the same to-day.

It is almost ironical to have to record that the Transportation Act of 1920 is now ordering done what was anathema in 1902. It is the best example I know of keeping politics out of rails and rails out of politics. Nothing forced the action of the Federal government in 1902, but the furor of soreheads from their own folly; and if space permitted cases could be cited where lawsuits and injunctions were begun for no other purpose than to give two or three notorious "pool manipulators" a chance to raid the sued companies. I refrain from giving the names of these manipulators, for they are unworthy of even infamy in history; but it gives me great joy to add that in spite of their prestige in press and Street, of their claptrap glory in headlines as "wizards and millionaires over night," of their tips of fifty dollar bills to hotel stewards and waiters, of their palaces in Atlantic seaboard resorts and Western cities (which, the press always neglected to add, were avoided by well-bred neighbors as if housing smallpox), such gentry died ruined, the pensioners of their families. Later, for war tricks, one served a term in the penitentiary. Occasionally, when news was scarce, another would get a reminiscent interview with himself in the press; but the public has a short memory for fools and scamps. "Who was the old party?" "Oh, yes—chap who swung the raids on Southern Pacific, or United States Steel, or bit off more than he could

Vanderbilt and Daniel Drew were the two great rivals on the Hudson for the early steamboat business. This old print shows one of the Drew steamboats sailing beneath the Palisades.



THE GREAT RACE FOR THE WESTERN STAKES *1870*

This cartoon indicates how our fathers felt about the railroad kings in the 'seventies. The two contestants for Western stakes are Commodore Vanderbilt and Jim Fiske.

chew in the Northern Pacific corner "; and the names went down to the junk heap of oblivion, where they belong.

When Harriman ultimately sold Northern Pacific stock, in 1905 and 1906, the shares were selling on the Exchange at 230. The profits to the Union Pacific were about fifty-eight million dollars — as a shrewd critic now on the Interstate Commerce Commission said at the time, " licked in a fight with a colossal fortune as the result." It explains how the Union Pacific was enabled to buy the securities of other strong lines like the Santa Fé, the Baltimore and Ohio, the St. Paul, the North-Western, the Illinois Central, the New York Central, to the amount of over one hundred thirty million dollars which could not be described or attacked as a violation of anti-trust laws suppressing competition.

Harriman's heartbreaking clash with President Roosevelt must be given with the first years of the Interstate Commerce Commission's activities. How Harriman, in the midst of these life battles on rails, swung all his frail and waning strength into helping San Francisco after the earthquake and fire of 1906, sending out of San Francisco more than two hundred thousand refugees free of all costs; and then plunged into the saving of Imperial Valley from an inundating sea just when the Federal courts were saying that the Southern Pacific, which was doing the saving job, could not be permitted to remain in the Union Pacific group — are not essential parts of the steel rails' progress. They only illustrate the tremendous scope of

that progress from little links in the 1820's to administrators of empire by the 1920's; but the Angel of Records had sounded Mr. Harriman's call in 1909. The flame of the spirit burning brightly to the end quenched suddenly on September 9, 1909. He died peacefully in his home on the Hudson as a warrior going to his rest.

Someone once said of John D. Rockefeller that before he dies, in the interests of race history, he ought to be made to give his own life record of successes and failures, of mistakes and chance luck and carefully thought-out wisdom as to this or that course, for the future guidance of men. Like Hill and Harriman, Rockefeller's life was too essentially based on truth and facts for him to lie. He never fooled himself; and such a life record he has left to be given out when antagonisms die down. It is the tragedy of both Hill and Harriman that both lived at such frantic pace to the very end, neither had leisure to con over his life and leave its lessons as headlights for the future. Their biographers did the best they could with written scraps of records, but behind the visible acts of every man is the guidance of his own spirit, the why of this or that decision, the reason of this or that quick move on the checkerboard of life. Unless the actor tells that secret himself, it is lost to human annals, and few men see themselves clear enough of vanity and conceit and self-delusion to know whether their success was the result of the knockabout of chance or the harnessing of chance to their own aim. Hill and Harriman were both honest and clear enough thinkers to have left

such a record. Hill died in the zenith of his power, so little dreaming death was near that he did not even leave a will. He died like Rhodes, so frantic to finish his life job before the Shadowy Figure beckoning at his bedside could call him away that not one scrap of his inner life is left to the world.

Good intentions count not one feather's weight in the Last Assize. "By their fruits, ye shall know them."

PART VII

Modern Buccaneers in a Later Era

Chapter XXVIII

Legal Rascality, Loaded Dice, Light-Fingered Finance, And Modern Buccaneers. How The Interstate Commerce Commission Came Into Being. 1888–1914

IT is now necessary to "telescope back," as the movies say, or to "switch back in order to go forward," as the railroad man puts it.

Americans are regarded by superficial observers as rashly hasty in legislation. Quite the contrary is true. Americans are terribly hasty and rashly irresponsible in political accusations and counter accusations; but they are very deliberate and almost laggard in corrective action and court verdicts. When as many as forty thousand new laws a year are proposed in the various states and some twelve to fourteen thousand new laws are yearly passed, this tardy action is a good thing. It is a buffer brake on precipitate, blind stampede before the impetus of passion, prejudice, trickery. It is really the stolid horse sense of the middle-of-the-road man, who wants to be sure where he is going before being hurled in the ditch by fanatic partisans on either side. Otherwise the daily life of democracy would be strangulation by regulation.

Exactly what did the Grangers demand from rails? The whole history of the Granger movement can be found in a book by one Martin, whose real name was J. L. McCabe. This was evidently issued as the official embodiment of Granger sentiment in 1874. Omitting

all the hotshot, the demands of the Grangers boiled down to several main points.

Equal mileage rates for long and short haul. We have that to-day, subject only to slight modifications in blanket rates from Chicago to the Atlantic seaboard, without which the Western farmer might lose his Eastern market.

Rates based on moderate profits. The Transportation Act of 1920 names but *does not guarantee* that profit slightly over five per cent.

Reduction in rates. Examples of the reductions in rates have been given; and when the rate slashings occurred, which lowered revenues to less than the cost of running a train, much of this fury died of its own fires. Of all the great rail systems in the world, rates in the United States on a ton of freight for one hundred miles were the lowest — a third of the charges for England, France, Austria; less than half the charges for Germany and Rumania. While all rates advanced slightly after the Great War, that proportion still stands in spite of the fact that foreign rails can combine with steamship lines to get a lower cost by operating rails and ships in combination. American rails are forbidden from doing this by law. Anyone who wants the figures can get them from Interstate Commerce Commission reports. I refrain from giving them simply because they are subject to revision at any time by the Interstate Commerce Commission.

Periodic revision of rates. This is now possible on petition of any plea, before the Interstate Commerce

Commission; and to the amazement of coal carriers to the Lakes and Atlantic seaboard in 1928, they were denied the right to reduce rates.

Limitation of dividends. The limitation of dividends on purely traffic returns has already been given.

Division of profits with the public. While the Transportation Act of 1920 does not guarantee profits slightly over five per cent, it does enact that traffic returns above that five per cent shall be appropriated and applied in certain ratio to help weaker lines. Whether this will stand in final appeal to the Supreme Court remains to be seen. Whether it is fair to compel an honest well-managed rail company to divide its profits with a rail wrecked by rascality or destroyed by boneheaded management also remains to be worked out.

Fair and square interchange of traffic with all other rails; no blocking by rivals; no favors to friends. This is now the law of the land and subject to the Interstate Commerce Commission on any humblest shipper's plea.

The publicity of rates. This is also now law and subject to penalty when violated.

Rebates to special shippers forbidden. This is also subject to penalty.

Consolidations forbidden. We have already seen how in the Roosevelt régime consolidations were dissolved and how later, in the Transportation Act of 1920, they were ordered to go ahead.

All the basic demands in Granger agitation from 1873 to 1887 have been enacted in law.

Now jump forward to our own generation, prior to the Great War. It is just as interesting to see what the Radicals in our own day demanded from rails. Nor is there any use in calling these Radicals hard names. They, too, had ground enough in all conscience for demanding changes. They had witnessed legalized rascality acting in the dark, great promoters playing the game with the loaded dice of light-fingered finance, modern buccaneers sending the shareholders walking the plank into the black seas of ruin. Perfectly true, in the modern case, it was not the shipper who was scuttled. It was the honest investor, the little shareholder, the bondholder; but the result was the same — thieves got away with the goods; and the honest man got away with his pocketbook slashed and only small change, if any, left. This story will be given in full presently. The point to emphasize is — the Radicals were sincere. Another point to emphasize — many of the Radicals would not go so far in 1928 as they did in 1913. Then the demand was for nationalized rails as a remedy. To-day, it isn't. People witnessed nationalizing during the war and they did not like the results. Much less did they relish crippled service at higher charges. If it be argued that in peace nationalized rails would present a different picture, the answer is a fact. In peace since the war, they haven't. Nationalized rails, even at much higher charges for service than in the United States, have not paid, with the exception of Italy; and our people would not care to see American rails pass under a Mussolini régime. If it be said German rails

paid in 1927, to that statement should be added two other facts. They only paid if you do not charge against them interest on money put in by the government. Even then, the rates were raised and had to be still further raised for 1928. Also when to-day over eighty per cent of all rail shares and bonds are owned by the general public, not by little inside rings, we pretty nearly have voluntary national-owned rails without government-owned rails. Also when you look up the figures on which private investors own rails and find the average investor's holdings are closer to thirty-five hundred dollars than to five thousand, you begin to realize who really owns the rails.

Let us see then what were the demands by the Radicals on rails in our day.

That the railroad be regarded as a public highway. This was tried out in both Massachusetts and Pennsylvania in the early days of rails and failed utterly.

That the rails cannot be privately owned, but must belong to the sovereign power — the people — just as much as the public highway. But the Constitution guarantees a man's rights to his own property and unless the public pays him for that property, his private property cannot be confiscated; and that guaranty has been the bulwark of human liberty since the days of Magna Charta. Russian and Mexican experiments and experiences have not increased men's desires to break down that bulwark of human liberty.

The public owns the public highway, therefore it owns the rails. The public builds the public highway

with its taxes, but it does not build the rails with its taxes. In fact, the rails pay an enormous quota of taxes to be used for the public highway on which run motor buses and trucks — its rivals. With the exception of one state in the Union — Washington — motor taxes do not even cover repairs to the public highway. It was the private investors' money built the railroad — in the case of Pennsylvania, in such small contributions as from one to five dollars. Besides, the state building and operation of rails was tried out in almost every state in the Union from 1828 to 1869; and ended in disastrous losses in every case. The state handed the job over to private enterprise such as it was; and such as it was, with all its blunders and losses, private enterprise did the job.

Excess profits belong to the public. This dictum has been embodied in the Transportation Act of 1920, but whether it will hold in the final findings of the Supreme Court remains to be seen. What profits are really depends on valuation; and the Federal valuation of rails has proved just twice as great as the Radicals who demanded Federal valuation estimated rails to be worth. Just here an ironical fact should be recorded. It illustrates the danger to its friends of putting up a theory for a fact. There were probably never any sincerer Radicals on the face of the earth than William Jennings Bryan, Senator La Follette, Charles Edward Russell. Yet over thirty years ago in a celebrated Nebraska Case before the Supreme Court, when costs of rail material were far below the costs of construction during the Civil War era, Mr.

Bryan got a ruling established by the Supreme Court that rates must be *based on costs to reproduce rails, not on what it had originally cost to build them.* Mr. Bryan hoped to get rates established low on that basis. Now when costs to reproduce are up easily three hundred per cent in wages and one hundred fifty per cent on material, that ruling compelled the Interstate Commerce Commission in its recent valuation to obey the Supreme Court. To use a slang expression, " the boot was on the other leg." It is one of the best examples I know to prove that you cannot cut facts to make them fit a pattern theory. The theory to be workable must accord with facts; or the facts will smash the theory. Especially is this so in the case of an organic, living, growing thing like rails.

Next, said the modern Radical, the railroad is the successor to the old turnpike road — to which the railroads might respond: " Ye gods! if that were so, we might limit baggage to fourteen pounds; we could charge passengers on short distances ten cents a mile and freights twenty cents a mile. We could charge on a ton of freight from New Orleans to Fort Benton three hundred dollars " and such scales all along the line as would make a rail investor a millionaire overnight. Suffice it to say of that Radical demand, if any rail attempted to enforce it, the steel would be torn from the tracks in a week and the stations burned by an outraged public. Again it illustrates, in an organic growth you cannot cut facts to fit theories; but it is only fair to add that few Radicals to-day entertain

the same theories held prior to the Great War. With all our blunders, we are nevertheless blundering forward. With all our stumbling, like a child learning first to walk and then to run, we are falling upstairs, not down. With all the rear kicks of accumulating experience, we are being lifted, not thrust down and out.

There isn't a doubt that the agitation of the old Granger era prepared the way for the coming of the Interstate Commerce Commission. It had to come. Over forty different states had over forty different sets of laws regulating rails. Strangulation by regulation was becoming a daily nuisance. It would have required the entire time of a staff of attorneys to determine what a rail could or could not do. What was legal in Illinois was not legal in Wisconsin and Minnesota. California had one set of laws as to charters, Kansas another, and Kentucky yet another, which permitted a railroad in the seventies and eighties to bond pretty nearly anything except the moon. Hundreds of examples of such contradictory laws could be given; but as many have been changed, such cases would clutter up the story. They can be found in the Carnegie Institute Report or William Washington's almost complete compendium down to 1911, both of which are impartial; or in *Ringwalt's Compendium,* which is avowedly a rail book.

Space does not permit the full story of the gradual extension of the Interstate Commerce Commission's control in the regulation of rails. That, too, came as an organic growth to meet the needs in each era. The

act creating the Interstate Commerce Commission was passed in 1887. It was acknowledgment of the fact that only the Federal government could exercise complete control over interstate traffic. As a matter of name, the word " interstate " is misleading. What the Act implied was not *in* each state but traffic passing out from state to state. Now, for instance, could a shipper with a grievance in California sue a road chartered in Kentucky? He could chase it up from court to court to the Supreme Court; but that took money. It also took time. Like Dickens' famous *Jarndyce vs. Jarndyce,* the verdict might require a lifetime. The first commissioners chosen by President Cleveland represented every section of the country; and that precedent has been followed ever since. In every case they were men of wide experience in transportation. In only one case since 1888, has there been appointed a man who had had no experience in transportation; and that may have been to create an umpire in a tie vote or minority report, or to represent the simon-pure public. By the recent Transportation Act of 1920, the number of Interstate Commerce Commissioners was increased to eleven.

The first trouble in the functioning of the Interstate Commerce Commission was that, though favors and rebates were forbidden by law and rates had to be made public and could not be changed without notice, the Commission's power to secure evidence and impose penalties was so slight it was hampered. Whether it was a " tail to wag the dog," or " a head to growl at the rails," the tail was wired down or the

dog muzzled so it could not fight. The Commission had to get power to prescribe fair rates. This came in the Elkins Law of 1903. Then came the Hepburn Act of 1906 putting pipe lines, switching, maximum, minimum, joint rates under the Commission, with immediate appeal to the Supreme Court in case of suits and publicity accounts; and finally the Transportation Act of 1920. Minor amendments to all these Acts gave the Interstate Commerce Commission absolute power over rates, valuations, the issuance of securities, " watered " stock, almost any sort or condition on plea from an aggrieved shipper; and the Act of 1920 authorized the very consolidations which the courts had been outlawing. It is rather ridiculous to have to set down that the Sherman Anti-Trust Law of 1890, which was invoked to break up consolidation, was not aimed at the rails but was used against them as the result of rascality, light-fingered finance, and buccaneering on the part of promoters, who were no more true rail builders than the scavenger birds that hover over fighting armies.

The question at once obtrudes on the mind, if courts were not debauched, sold on the auction block to the highest bidder, how could all these forms of fraud come in the modern picture of rails?

Keep that question in your mind like a fishhook in a sore finger. You are going to need that wounded finger presently to index some bitter lessons learned in very recent experiences, which shall be set down without excuse or blame, extenuation or exaggeration.

Every big rail company and every big rail banker

in the country welcomed and approved the extensions of power to the Interstate Commerce Commission. It gave them a stable base for action. It took rails out of politics. It protected securities from the raids of knaves, plunderers, gamblers, and leather-lunged fools. For the first time in a century's history, it gave them protection within the law. By 1900, only fifty per cent of the rails in the country could pay dividends. Meyer gives the number of bankrupt rails in 1896 as 169. In that year some rail stocks now earning five to seven per cent were selling at twenty-five cents for a hundred dollar share. Something had to be done to protect the rails.

And yet — and yet — tragic to relate, by 1910, thirty-nine rails had gone in the hands of receivers by what can only be described as rascality. If you add to that number the casualty list to 1926, there were easily forty rails that went down to ruin by the devious route of bad finance; and to that total you can add two more that were honest failures, and one that didn't go in the hands of receivers but caused more widespread ruin than many that did.

I need not add that the two honest failures were the Canada Nationals and the Chicago, Milwaukee and St. Paul; and the one that did not go in the hands of receivers but caused great ruin was the magnificent old New York, New Haven and Hartford.

To put it more startlingly, the St. Paul comes cleanest out of the mess of failure; the New Haven and Hartford, blackest and most tragic; the little but

numerous groups of Southwest rails the most inevitable, but not so widespread in ruin. Of the Southwest group, one need name only a few — the Kansas City Southern, the Missouri, Kansas and Texas, the Missouri Pacific, the Western Pacific, the Chicago and Alton, the Denver and Rio Grande, the Texas Pacific. The Canada Nationals do not come in this story. I mention them only because they are often erroneously cited in Congress as shining examples of successful nationalized roads. They were neither successful nor were they nationalized roads. Any land grants they inherited were insignificant, from branch lines to the Pas east or up Dauphin way west. I also cite them because they were roads that had bonds backed by provincial and federal governments, of which not one dime has been lost to the buyers. People will shriek at their record being called clean; but I repeat, it was clean. The unclean, shameless thing was the political fist — to be "greased" or it would hold up votes on those bonds; but the "grease" was not paid out of the bonds guaranteed. It was extracted by blackmail, whitemail, or whatever you call it, from the builders — both of whom, Sir Dan Mann and Sir William Mackenzie, retired ruined and broken-hearted by the failure of the great project. The roads fell into Canada's lap because they could not pay interest on the bonds and Canada assumed both the roads and the obligations. I also cite them because the cause of their failure was very similar to the cause of the old St. Paul's collapse, from a road whose stock stood at 165 for years only to fall to 8 and 16.

We can call both the Canada Nationals and the St. Paul honest failures.

Immigration had been coming to America in flood tides. The Great War stopped that immigration. That diminished expected revenues at one fell swoop.

The war did more. It wooed from the farms along these lines soldiers for the firing lines and workmen for the higher wages of the factory. In Canada, we know such loss of settlers did not fall far below eight hundred thousand. Men simply jumped their homesteads and quit. In the United States, we know such loss of settlers in the West did not fall far short of six hundred thousand in a single year. In shipments of farm output alone that loss was staggering to the revenues of newly extended rails. I do not know what the value in shipments from a three hundred twenty acre farm totals in freights for all parts of the country; but in settled sections of the Northwest, what a farm of that size buys and sells totals in freight over seven hundred dollars a year. Even if only a proportion of the total loss from abandoned farm areas fell on the St. Paul and Canada Nationals, such loss on newly extended roads was enough to send solvent established roads staggering to their knees. Rates could not be raised at the time; for the remaining farmers were themselves staggering under higher costs; and when farm prices collapsed after the war, the same rate increases for the West as for the East were out of the question.

But that was not the whole tally of loss from the war. Neither road was complete when the war broke.

The St. Paul was finishing its extension to the Pacific Coast with electrification of 649 miles of the line from Montana west. The Canada Nationals had their trackbed down and rails laid — and for the most part magnificently built; but stations had to be built, trestles to be filled and replaced, curves to be adjusted, sections subject to yearly washouts rebuilt or bridged or blasted out of solid rock from the opposite side of some torrential river. I crisscrossed some of these sections in a punt over such canyons and rapids and saw them myself. When the war came, wages went up three hundred per cent and cost of material one hundred fifty per cent; and both these two roads could sell neither bonds nor stocks. Their backs broke under the burden; and that is all there is to tell.

I know a shriek went up to high heaven about both roads being looted by corruption; but in most exhaustive hearings — Parliamentary debate on the Canada Nationals, Interstate Commerce Commission examination on the St. Paul — not one such charge was sustained.

But here as usual comes in another example of facts not fitting theory on rails, and theory falling with fearful loss on its own authors. In the hearings before the Interstate Commerce Commission in 1927 on the collapse of the St. Paul, the attorneys for the eleven thousand miles of the fine rail crossing twelve states drew attention to the fact that from 1921 to 1925 freight, through diversion from the rail to ships passing through Panama, fell almost half; but the Puget

Sound extension had really been built to take advantage of shipments west for Panama and shipments east from Panama, as well as other transpacific traffic. Just when the St. Paul was in condition to add to its revenues by carrying freight to and from the West Coast, an act of Congress forbade American rails operating ships through Panama or entering into water-rate combinations to take advantage of Panama. Foreign roads, whose taxes did not help to build Panama, could; American roads, whose taxes did help to build Panama, could not.

What states fathered that law on Panama? Chiefly those good old Middle Western states through which the St. Paul ran. Where did the greatest loss of St. Paul stockholders from value of 165 to 8 and 18 fall? On those same good old Middle Western states. The thing is laughable, but it is also pitiable and tragic; for investors past the meridian of life when they put savings into stocks cannot possibly live to see the St. Paul come back, as back it will come, from 8 to 100 and 150, just as the Northern Pacific came from twenty-five in 1896 to one hundred fifty dollars in 1906, or the Union Pacific from 20 in 1896 to 200 in 1928. It is another example of stupidity almost unbelievable in the Congressional mind.

But didn't even the far-seeing James J. Hill once refer to Panama as a pond for lily pads? Yes, he did; and he was probably thinking of all the other canals in the United States which had failed to pay their way. The whole country was ditched with such failures from the Miami to the Chesapeake. He was

probably also thinking of the utter failure of French capital to put through a Panama canal; but when he saw that the American government was going to succeed where French capital had failed, what did Hill do? He reversed his policy and bought into north and south rails.

Suppose for a moment that the Congressional mind was right, that by combination with steamship lines — their own or others — the transcontinentals tried to "fill Panama"; that is, I believe, the favorite phrase when one means use it so exclusively that by combined rates they could render almost negative its benefits in reduced rates. Just suppose that for a moment! Is it thinkable to any sane mind that with idle ships all over the world literally rotting at their own docks for lack of cargoes, being scrapped and burned for lack of cargoes, tramp steamers going their own serene way to every port in the world would not flock through Panama and underbid in freights any figure that rail-owned ships could offer? Is there a single port on the Pacific or on the Gulf of Mexico that has not its own civic-owned docks open to all comers? Does not the Interstate Commerce Commission forbid — yes, forbid with penalty of heavy fines — discriminations or favors to any line, ship or rail?

I have often wondered whose head was guilty of *not thinking* when that Panama law was enacted. The rails do not care. They will get the traffic whether it goes east through Panama or comes west from Panama; but the act does work an incredible hardship against the American shipper. His taxes helped

to build Panama as much as the rails' taxes; and if the rail-owned ships had to lower rates to meet tramp ships, the shipper would get the benefit. It isn't hard to see why the rails never opposed that Panama Act which seemed to hit them so hard.

Here we may let the St. Paul and the Canada Nationals fade from the picture; and go back to the disturbing question: How, with the enlarged powers conferred on the Interstate Commerce Commission, could there be such legalized rascality, piracy, and buccaneering in modern rails as was witnessed from 1900 to 1914? It is a much sadder story than the oft-told tale of the early Erie. There was some excuse for those " old birds of prey." They were acting in a twilight zone when it wasn't yet clear what was legal and what was not. Some were buffoons. Some were thugs. Some were thieves. Some were hypocrites. Some were gamblers; but not one of the modern crowd can be put in these classes. These moderns knew what they were doing and they knew they were doing wrong; else they would not have acted in the dark and destroyed their own records, or used dummy girls and boys in their offices to close deals for millions, when the youthful check manipulators had never before handled deals in their own names exceeding thirty to forty dollars a week. They knew they were doing a damnable wrong to the innocent investor, whether in stocks or bonds. They knew they were shaking the faith of the public in rails for ten years. They knew and they did not care, if only they could get away with the goods.

It seems almost a pity to drag these skeletons from their dark closets; for there are very few of the wrecked lines that will not or have not come back to their primal prosperity. As Mr. Loree says, probably thirty thousand miles of unneeded lines have been built in the United States and will have to be abandoned or supplanted by the motor truck; but that is a very small proportion out of two hundred eighty-five thousand miles of rails; but the school of failure teaches just as many lessons as the school of success. If all angles of the picture were not viewed, this would not be a true picture of rails' progress as "a pillar of cloud by day and a pillar of fire by night" leading the race to higher destinies.

From now on we must follow chapter and verse. Take the New Haven and Hartford first.

Says the Interstate Commerce Commission in its investigation of 1914:

"The New Haven System has more than 300 subsidiary corporations in a web of entangling alliances . . . many of which were seemingly planned, created, and manipulated by lawyers expressly retained for the purpose of concealment or deception . . . the witnesses were in the main hostile . . . and their testimony was unwillingly given. . . . The result of our research has been to disclose one of the most glaring instances of maladministration revealed in all the history of American railroading. . . . Many instances were uncovered of violation of the laws of different states. . . . The difficulties are wholly due to its own mismanagement. Its troubles have not arisen because of governmental regulation. Its

troubles have not arisen because of regulation by governmental authority. Its greatest losses and most costly blunders were made in attempting to circumvent governmental regulation and to extend its domination beyond the limits fixed by law.

" The subject matter of this inquiry relates to the financial operation of a railroad system which on June 30, 1903, had a total capitalization of approximately $93,000,000, of which $79,000,000 was stock and $14,000,000 bonds. In the ten years from June 30, 1903, this capitalization was increased from $93,000,000 to $417,000,000 exclusive of stock premiums, or an increase of $324,000,000. Of this increase approximately $120,000,000 was devoted to its railroad property and was expended for betterments and equipment. This leaves the sum of $204,000,000, which was expended for operations outside of its railroad sphere. Through the expenditure of this sum this railroad system has practically monopolized the freight and passenger business in five of the States of the Union. It has acquired a monopoly of competing steamship lines and trolley systems in the section which it serves. The financial operations necessary for these acquisitions, and the losses which they have entailed, have been skillfully concealed by the juggling of money and securities from one subsidiary corporation to another.

" Marked features and significant incidents in the loose, extravagant, and improvident administration of the finances of the New Haven as shown in this investigation are the Boston & Maine despoilment; the iniquity of the Westchester acquisition; the double price paid for the Rhode Island trolleys; the recklessness in the purchase of Connecticut and Massachusetts trolleys at prices exorbitantly in excess of their market value; the unwarranted expendi-

ture of large amounts in 'educating public opinion'; the disposition without knowledge of the directors, of hundreds of thousands of dollars for influencing public sentiment; the habitual payment of unitemized vouchers without any clear specification of details; the confusing inter-relation of the principal company and its subsidiaries and consequent complication of accounts; the practice of legerdemain in issuing large blocks of New Haven stock for notes of the New England Navigation Company, and manipulating these securities back and forth; fictitious sales of New Haven stock to friendly parties with the design of boosting the stock and unloading on the public at the higher 'market price'; the unlawful diversion of corporate funds to political organizations; the scattering of retainers to attorneys of five States, who rendered no itemized bills for services and who conducted no litigation to which the railroad was a party; extensive use of a paid lobby in matters as to which the directors claim to have no information; the attempt to control utterances of the press by subsidizing reporters; payment of money and the profligate issue of free passes to legislators and their friends; the investment of $400,000 in securities of a New England newspaper; the regular employment of political bosses in Rhode Island and other States, not for the purpose of having them perform any service but to prevent them, as Mr. Mellen expressed it, from 'becoming active on the other side'; the retention of John L. Billard of more than $2,700,000 in a transaction in which he represented the New Haven and into which he invested not a dollar; the inability of Oakleigh Thorne to account for $1,032,000 of the funds of the New Haven intrusted to him in carrying out the Westchester proposition, the story of Mr. Mellen as to the distribution of $1,200,000

for corrupt purposes in bringing about amendments of the Westchester and Port Chester franchises; the domination of all the affairs of this railroad by Mr. Morgan and Mr. Mellen and the absolute subordination of other members of the board of directors to the will of these two; the unwarranted increase of the New Haven liabilities from $93,000,000 in 1903 to $417,000,000 in 1913; the increase in floating notes from nothing in 1903 to approximately $40,000,000 in 1913."

There is no use giving details of the financial transactions except in the summary of the Interstate Commerce Commission.

" The enormous sum $36,434,173.25 was expended for a road only 18.03 miles in extent, which is being operated at an annual loss of approximately $1,250,000. The Westchester acquisition was planned and executed by a special committee of the board, consisting of Directors Morgan, Rockefeller, and Miller, with President Mellen as chairman."

Of the actors in this episode, only one — Mr. Mellen — seems to have had the backbone to register a protest and keep his record clean; and he was a practical railroad man. Penned on the back of one of his reports were the words:

" The trouble with this is there is nothing to show who got the money for the truck turned over. I don't like the look of it, and I don't see why the matter should not be made plain. I would feel better if there were at least a disposition to let me know something more than appears in the record.

(Signed) C. S. M."

The most amazing adoption in the New Haven family was the Rhode Island trolleys worth, as Mr. Mellen testified, $6,000,000 and charged up with debentures at $19,899,000 — over $12,000,000 of what Mr. Mellen called " capitalized water."

Who got almost $13,000,000 and what were they doing with it? That was the point that troubled Mellen and on which he could not get any answer from his bankers.

Next came the adoption of a group of Atlantic steamship lines — costing over $24,000,000, which at the wildest exaggeration were not worth $10,000,000 and were ultimately sold at less than $4,000,000.

" These steamship lines were not acquired openly, but covertly and by devious methods. Dummy companies, and dummy officers and directors were used in financial maneuvering that resulted in the New Haven controlling these steamships."

Again Mellen, the practical man, advised the disposal of this junk and again the steam roller of his Board went over his advice.

Then came the control of the good old Boston and Maine, which had paid dividends for more than fifty years, had a capital of only $31,000,000 and bonds of only $34,000,000, and emerged from the mill of manipulation a financial wreck.

Says the Interstate Commerce Commission:

" The frequency with which dummy corporations and dummy directors appear in this record leads to the conclusion that some one high in the counsels of the New Haven had an obsession upon the subject of

the utility of such sham methods. The directors of the Billard Company confessed that they were dummies and knew nothing of its operations. Why men of respectability and standing as these appear to be should lend their names as dummies passes comprehension.

" In the organization of one of the steamship companies the young lady stenographer was made president; and a youth of twenty-one years of age was selected as treasurer of another company.

" Clerks and irresponsible persons were drawn upon to supply the demand for dummies in the financial joyriding by the management of the New Haven.

" Payments made for political purposes totaled a large sum.

" For instance, in 1900, $50,000 was contributed by the New Haven for campaign purposes, through J. P. Morgan & Company. No proper and complete voucher for this payment appears on the books of the New Haven Company.

" In 1904 a payment of $50,000 was made through Mr. Mellen for political purposes. This was secretly done and not reported to the directors or shareholders or in any manner made public.

" No public service corporation may rightfully use corporate funds to promote a political cause or to support a political candidate or a political party."

Mellen sickened of the proceedings, and we find his terse comment: " $1,200,000 for shares not worth ten cents a pound."

Now in every case the laws of New York State, of Connecticut, of Massachusetts, of Rhode Island were violated.

Why were there no prosecutions?

Because records had been burned.

Because in every step of proceedings, you can pick out the names of more or less secret political bosses.

Because in nine cases out of ten, punishment would have fallen, not on the authors of the wrongs, but on "the dummies," boys and girls who would have lost their jobs if they had disobeyed orders.

Let us finish the indictment of the Interstate Commerce Commission.

"It should be just as grave a crime to plunder stockholders or the public through a railroad corporation as it is to personally rob an individual."

There is no use ducking our heads to miss a boomerang. This sort of thing creates distrust of all "high finance" far more than the ignorant ravings of leather-lungs and nonstop tongues above a soap box. Examine the names involved. Each man represented great banking interests, lived an irreproachable private life, and several were public benefactors of almost notorious generosity in all other relations — art, charity, education, scholarship, church, the helpless or the needy.

Why did they sanction these curiously devious financial methods, which reduced more people to ruin than all their charity could rescue?

The New Haven did not go in the bankruptcy court and is rapidly coming back to its old-time prosperity; but how about the investors, who saw their stock in a rail they regarded sound as government

bonds fall from 174 to 9; and received no dividends for ten years? Old ladies were forced to become wage earners. Old men mortgaged little homes and lost them.

Again, if you examine the names of the directors who have since died, you will find their own estates, though large, totaling much less than anticipated.

Why did they sanction what can only be described as the methods of crooks?

I can give only a few guesses at the answer to that question; but I would not be afraid to take a sporting bet there is a kernel of truth in each guess.

The panic of 1907 had left several big banking institutions in New York not *impaired,* but shaky enough to demand strengthening and concealment of their real condition till the crisis had passed. I do not say the funds extracted from the New Haven by loading it with securities "not worth ten cents a pound" were used to repair the breaches in such financial structures; but I do say such funds deposited in such banks — and there were three of them at the time — must have rendered them secure from possible runs. That explains the secrecy, too.

At this very period, from 1900 to 1914, every rail banker in the country knew that for dense traffic areas, water power was as certain to supplant steam as steam had supplanted the turnpike; but water power demands enormous preliminary outlay in buying up farms for reservoirs and sites for dams, in building dams; and I do know that in this period there was hardly a power site from Maine to Rhode

Island, which was not bought up with ample ground upstream to provide vast reservoirs; and in many cases the dams were built. If such were the aim, the directors of the New Haven may have justified themselves that the future earnings of a line through a dense traffic area would more than compensate the enormous " capitalized water." We see this electrification rival going ahead on two of the great systems in the East.

Unfortunately, neither guess justifies the looting of two fine old dividend-paying rails by loading their backs to the breaking point with debts on which their revenues had to pay interest. The rails did not own the banks which may have been bolstered up. The rails do not to-day own the power companies from which in a few years they will be buying power to drive their swift shuttles of dense traffic.

There is a third guess, which may have some meat in it.

Hadn't Harriman taken over the Union Pacific and made it one of the greatest dividend payers and one of the best lines in the world? He did; but he did that in his fifties, when he had an expectation of at least ten years of life to carry out his plans. When he tried the same thing with a Chicago road, he died before his plans could be carried out and left the one great stain on his otherwise wonderful record. There was a stage of proceedings here where Mr. Mellen scented trouble ahead and hoped " Harriman should be the Moses out of all the trouble anticipated " and be left with " the fight on his hands " over these

worthless stocks; but Harriman refused to be either a scapegoat or a billy goat. Again, hadn't Morgan taken the Northern Pacific over as a bankrupt property and built up solid values from its wreckage? He did; but he did it almost twenty years prior to the wreckage of the New Haven. I am certainly not revealing secrets when I set down frankly that for one year prior to Mr. Harriman's death and for one year prior to Mr. Morgan's death, neither man was in condition physically or mentally to carry the load of anxiety and responsibility which he could have carried lightly ten years before. We know Mr. Harriman's associates urged him to retire for a year before he died; and it is also known, though it has not been placed in any formal biography, that for a year before Mr. Morgan's death he was so far from his normal health that his physicians took him on his yacht to the Mediterranean and kept him isolated from anxiety there until he died. In case this statement is challenged or denied, I could add the story of one of the greatest capitalists in the world being called by Mr. Morgan to the latter's office in this period and, because he was either absent-minded or ill, the great power of Wall Street, at whose nod men trembled, turned and asked gruffly what he wanted. It is inconceivable that a man of Morgan's power and utter indifference to money as money, who but a few years prior had taken twelve million dollars out of his own private fortune to pay for the bad judgment of underlings on another rail property, should have looted the New Haven for his own gain.

All this did not make up the fearful losses entailed on investors in New Haven; but it does drive home some lessons to all investors in rails: (1) that directors must direct and not act on one man's nod and (2) that no director, be he wise as the angel Gabriel, has the right to discount a future dependent on his own life; much less has he the right to play ducks and drakes with a great property purely on his own judgment. Otherwise any great rail banker could wield more despotic power over a vaster empire than Napoleon's armies ever commanded.

As for the associates who blindly obeyed orders from "higher ups," with the one exception of Mr. Mellen, we know they had not the means themselves to finance the water power projects which they swung. We know they were forced to act or face ruin. We know their records had been clean up to this time. We know they were the heads of banks which might have collapsed had their real condition been known; but we also know that when records are destroyed the records can never be regarded as clean. While men playing a big part in finance cannot advertise their moves to hawks and vultures and plunderers, they need not destroy the only evidence which can clear their policy of sinister motive.

AUTHOR'S NOTE

Apropos of Panama, here is what Edward Hungerford wrote of waterways and rails six years before he had had any official connection with rails: "Some day we shall have to change our statute laws, and then, instead of barring our railroads from our waterways, we shall invite, urge, implore, and if necessary compel them to use these great natural arteries . . . for the relief of their overcrowded rails."

Equally apropos of electrification on the New Haven were his words: "New England needs electrification of her steam railroads and needs it at once. The New Haven field South of Boston . . . is ripe for installation. . . . The Boston and Maine . . . offers similar immediate opportunity. . . . Power will come on the copper wire and will move the silent trains around Boston. . . ."

And yet more apropos about the innocent investor's losses in worthless rail stocks and bonds: "*About $100,000,000 might be written off in poor bonds, that either are fraudulent or else never should have been issued, while there are four or five billion dollars par value of stock certificates which to-day may be regarded as fairly hopeless.*"

Hungerford's one mistake was that he regarded rails as "sick unto death" in 1922. They didn't die. Once the Transportation Act of 1920 gave them promise of surcease from the assault and battery they had withstood for ten years, they revived like the growth of vegetation in spring.

Chapter XXIX
More Of Modern Buccaneering
1900–1923

TO go on with the story of modern buccaneering, the place has come to tell of Mr. Harriman's one bad slip. It resembles an unexpected washout in a magnificently graded line. The details of Harriman's break with Roosevelt do not belong to this story. It began in a little scrap over campaign funds. Each man was too dominant a personality to brook being crossed and when the wires got crossed without any electric insulators between them, a friendship was burned out in a short circuit that must have hurt both. The weakness of the government case against Harriman was that the Interstate Commerce Commission was " sicced " on the Harriman deals when they had already receded seven years in past history. The weakness of Harriman's defense was that, while there were no destroyed records, no dummies and all the other familiar devices of crooked finance, the Interstate Commerce Commission found a magnificent rail property wrecked.

Roosevelt must have known that much was going on in the rail world which would not bear the light of day and with characteristic fury " sicced " the Interstate Commerce Commission on the biggest game he could find. They found big enough game to satisfy the big game president.

To quote again chapter and verse:

" The Union Pacific Railroad Company in the year 1903 became the owner of 103,431 shares of the pre-

ferred stock of the Chicago and Alton Railway Company."

The Chicago and Alton had for years paid an eight per cent dividend on outstanding stock of over twenty-two millions. Its debt was ridiculously low — just over eleven million dollars. The character of the road and the revenues available from such densely settled territory need not be given. I have traveled over it twice in the past years and it was not "a puff-ball ready to dissolve in dust," as one of Harriman's apologists describes it. It was not one of the luxury transcontinentals, but a more comfortable, a more courteous little road with finer service it would be difficult to find.

"About this time Mr. Edward H. Harriman, Mr. Mortimer L. Schiff (representing Mr. Jacob H. Schiff), Mr. George J. Gould, and Mr. James Stillman, formed a syndicate to buy this stock, and bought it for $200 a share for the preferred and $175 a share for the common, making the total cost of the shares purchased $39,042,200.

"In about seven years, to June 30, 1906, the outstanding capital indebtedness of this company was expanded from $33,951,407 to $114,610,937, or an increase of about $80,660,000, and there was expended in actual improvements and additions to the property out of this capitalization only about $18,000,000 leaving an increase of its stock and liabilities, without one dollar of consideration, of about $62,660,000, or $66,190 per mile on the 946.66 miles of road owned by the company on June 30, 1906."

For sound finance, fifty per cent of stock and fifty per cent of bonds is regarded as a perfect balance.

Here was a road with only half as much debt as it had assets. The increase of its debt was as easy as taking candy from a baby. The bonds issued were increased at once to forty million dollars. The syndicate selling the bonds took profits of eight million dollars, "which," says the Interstate Commerce Commission, "should have been reaped by the railroad. . . . The stockholders then voted themselves a dividend of thirty per cent." The excuse given for the increase in bonds was to extend construction; "but no proceeds were left to raise money to construct the line contemplated." Under a new Chicago and Alton, the debts stood in six years at over $113,000,000.

"From this brief synopsis of the exploitation of the Chicago & Alton, it is evident that its history is rich in illustrations of various methods of indefensible financing. . . . The total of bonds and stocks was doubled."

Chicago and Alton sells to-day at 8 for common, 11 to 13 for preferred. Comment is superfluous. This was one of the cases where Mr. Harriman almost at once let go of the property he had bought. In 1904, it passed in the hands of the Moores and Reed of the Rock Island. Harriman undoubtedly intended to spend fifty million dollars in making the Chicago and Alton one of the great links in his dream of a world rail and water system; but like the dream of the New Haven for a far future, he loaded his mule too heavily for its back, and broke it.

The Chicago and Rock Island is another of the

beautiful examples of wrecking the present by discounting the future, which no director has any moral or financial right to do with other investors' property.

" In 1902, the main line of the Chicago, Rock Island & Pacific Railway Company extended from Chicago to Denver, with branch lines to St. Paul, Minneapolis and Kansas City. The territory served is one of the richest and most prosperous in the country and the system's ramification of branch lines insures to it a large volume of tonnage. It was then thriving and its prospects were promising, its stock selling in the markets of the world at more than $200 a share. In 1914 the shares had fallen to $20 and the road is now in receivers' hands. The evidence shows that the earnings of the railway company have steadily increased, and that in 1914 they were the largest in its history."

Capital was about fifty million dollars in 1901. It had been increased to almost seventy-five millions in 1914. Debts were over sixty-three millions in 1901. They were over two hundred thirty-five millions in 1914. Mileage had increased only from 3,128 to 5,367. As a " get rich quick " operator might declare, who would not be a rail promoter under a fairy wand that doubled stock and quadrupled debts, and took the profits and left the roads' revenues to pay the debts?

To quote the Interstate Commerce Commission again —

" On June 4, 1902, the capital stock of the railway company was increased to $75,000,000 and the board

authorized President Leeds to sell to certain individuals portions of this increased stock at par, although at the time the stock was quoted on the market above 175."

Salaries and bonuses to officers were paid as freely as dimes to office boys; but the officers' tips ran from seventy-five thousand dollars to thirty-five thousand dollars. And, of course, " books were burned at the end of each month " and such cryptic statements given out to shareholders, that even a lynx-eyed investor might be treated as a spy, a snooper, an impudent Paul Pry if he asked humbly what was happening to his own property.

It was an era when intoxicated financing seemed to go hand in hand with a moral sense as dead to legalized theft as any Captain Kidd of the piratical high seas drunk with rum and indifferent to victims rich or poor. Human nature does not change much under its garb of civilization. When we read the wildest ravings of the Radicals, we must remember that if you kick and bludgeon even a good dog, he will turn on you; and you must not squeal too loud if he takes you by the throat.

So we could go on down the list of the Pere Marquette, the Cincinnati, Hamilton and Dayton, the Denver and Rio Grande, the St. Louis and San Francisco, and the groups of Southwestern roads, which come rather in a class by themselves.

To epitomize some of the evidence:

" The Pere Marquette came into being as a con-

solidation of three relatively unsuccessful Michigan roads and began operation on January 1, 1900." Here stock was increased four times over and debts five times over in twelve years. Two receiverships followed in quick succession.

In connection with heroic endeavors to rescue the Pere Marquette and the Cincinnati, Hamilton and Dayton, Mr. Morgan did one of the magnificent acts in his rail financing. He had thought sections of these roads could be embodied in the Erie for whom he was acting. When he found he had unloaded on the Erie a very bad bargain, to quote the Interstate Commerce Commission:

". . . In his magnificent, unparalleled, and absolutely voluntary offer himself to assume the entire purchase, and to relieve the Erie Company from all contracts and cost in connection therewith."

The generosity cost him twelve million dollars. Said President Underwood:

" Several days before the rescindation process was had, I talked with Mr. Harriman in his office in the Equitable Building. Now, I can not give you any idea where he had been in the interim, but I very distinctly remember my conversation with him. I could not forget it, nor you could not forget it, if you had heard it, about what was necessary to be done. He said, 'You made the trade with Mr. Morgan yourself. No one was present. You had better go and see Mr. Morgan, and you had better not depend on anyone else but yourself. It is up to you. You had better go and better go now.' "

The record also clearly indicates Harriman's emphatic disapproval of the purchase upon his return in November, with the result that President Underwood obtained another interview with Morgan, as to which he testified as follows:

" Then I went down and had an audience with Mr. Morgan, and I told him that practically the Cincinnati, Hamilton and Dayton had a floating debt that was not visible and in the statement he showed me. He said, ' Well, we will look at the statement,' and there was some attempt made to find that statement, but it was unsuccessful; it was not produced. I had not kept it — well, I did not keep it. I said: ' Mr. Morgan, the statement that I made to you of the effect of the acquisition of the C. H. & D. on the Erie's finances is null and void, because the statement was inaccurate.' He looked at me and said: ' Well, sir, if the statement that we made to you was inaccurate, and for any reason you think that the Erie Railroad has made a bad trade, your duty is very simple — you have only to convene your board of directors and rescind it, and I advise you to do it at once.'

" I bade him good afternoon and walked out of his office, and as I came out of his office I met Mr. Stetson, and I told him, being counsel. ' Mr. Morgan has just authorized the rescinding of that trade, and I think it was a very unusual and extraordinary thing for him to do. I am surprised that he would do it. And I wonder if it would be bad taste for me to tell him that.' He said: ' He might like to hear it.' So I went back, and Mr. Morgan was standing with a paper in his hand, and I said, ' I would like to speak to you for a minute.' He made no answer. I said again, ' I

want to speak to you for a minute.' I said, ' I want to tell you I think you have done a very big thing, the biggest thing I ever came in contact with.' He said nothing. I said, ' Did you hear me? ' He said, ' I did, sir.' And I walked out."

To summarize the conclusions of the Interstate Commerce Commission:

" The exploitation in 1903, 1904, and 1905 of the Pere Marquette and the C. H. & D. was not an incident of railroad construction. The properties had long been established. Whatever control or regulation of the issue of railroad securities was exercised by the states in which these roads operate was inadequate to prevent the exploiting or to forestall subsequent hasty and unwise reorganization. To the extent that these flotations ultimately lodged in the hands of innocent investors, whether here or abroad, the public was deeply wronged. Whatever control or regulation was had of the properties and operations of the two roads was not sufficient to keep them in condition to satisfactorily serve the population dependent upon them. The result has been the same with each financial disaster to the carriers, serious loss to the holders of their securities, deterioration of their physical properties, and a marked impairment of ability to perform their functions as public servants.

" Nothing disclosed in the record before us is to be more regretted than the readiness of great banking institutions in our financial centers to loan enormous sums of money upon exceedingly precarious security in aid of such schemes as have been devised in the wrecking of these roads. Not only this, but the high officers of such institutions, while acting ostensibly as directors of the railroads, have in fact been little

more than tools and dummies for the promoters. The trustees of other people's money seem to have had little compunction about violations of their trusts for the benefit of the promoters, and at their demand."

The Southwestern roads — the St. Louis and San Francisco, the Western Pacific, the Denver and Rio Grande, the Missouri Pacific, the Kansas City groups — which fell into distress between 1900 and 1920 belong in a slightly different category. There were factors in the failures of these roads not to be ascribed in the slightest degree to rascality or " high finance," though buccaneers and vultures hovered on their flanks for a picking of bones, and certainly in one case a notorious Wall Street broker behind closed doors besought the sponsors to force a receivership by raiding the stock market, then if possible wrest control for a reorganization; and in another case, rival blocked rival in terminal construction and left the stranded orphan with bonds which fell to European investors from one hundred dollars to forty dollars during the war, when Belgian banks were unable to hold on. I do not specify these lines because all under new management are not only now solvent, but on the way back to a high degree of prosperity.

Among innocent causes of decreased revenues was the Mexican Revolution, which cut off a great deal of freight northbound — cattle, sheep, other stock shipments that used to come north in spring, fatten in the uplands of New Mexico, Arizona, Colorado, and go on to market in the autumn. Lumber used to be a great revenue from Northeastern Texas and Arkan-

sas. Such lumber areas were pretty well logged off by 1914, and the big operators were beginning to move to the Pacific Northwest. Irrigation and a land boom were rapidly repeopling much of this territory, when the war stopped both. It also made impossible the selling of stocks and bonds. While Texas and Oklahoma oil seemed to, and ultimately did, give a new source of revenue, oil went by pipe lines to the Gulf; and if you recall the war days, oil was one of the few land products held down in price in the interests of the Allies; and this in turn stopped " wildcatting," or the development of new oil areas, which came in floods soon after the war. The planning of town sites, which might have gone ahead with a great influx of immigration, was arrested by the war. I could tell of an enormous section of Texas lands held by one of the richest bankers of New York, which went on the market at this time as a result of collapsed values. Mineral output, which used to give the Denver and Rio Grande great traffic, had another collapse. Loans piled up. Traffic returns didn't. Among the primal causes of distress quoted by the Interstate Commerce Commission on three of these roads were too high capitalization, sales of securities at too low a price, payments of dividends which should have been conserved against arid days. Some of the very finest names in the Southwest rail world were caught in the net of circumstances. I do not give them; for I cannot see that either rail men or their bank backers could have saved them. The fact that the same bank backers and the same rail men have since the war pulled

these properties up to prosperous levels seems to prove that good intentions in such cases were not paving the way to an unsavory destination; and you find very few harsh verdicts in the Interstate Commerce Commission reports on these groups.

The lines have prospered since the war, and that is their best justification.

Granted that two or three of the Kansas-Texas groups mainly consisted of scrap logging roads bought up at scrap prices for a few hundred thousand dollars, and were then recapitalized without capital cash going into them but rather rebuilt by bonds issued to make them fine continuous systems from Kansas to the Gulf — the planners, no doubt, thought they were entitled to that "watered stock" for risking their all to make north and south systems out of scrap iron; and when the roads crashed, to the credit of the planners be it said, they crashed with their own structure — crashed, some of them with very sore heads and bitter hearts at the bankers for not coming to their rescue. Someone may know a single bank which dared take risks on rails in the World War era, I don't. The prices of stocks and bonds of some of the strongest rails in the densely populated East fell to the lowest level in all their history. One name I could give but do not because the man's record seems blameless, where the promoter of a great Southwest system died with an estate of less than $1000. When he began to buy up the links in his chain of Kansas roads, he was worth a million.

More to the point is the question, can such a de-

bacle as forty roads going to wreckage in twenty years ever happen again in American rails? In an attempt to get the true answer to this question, I presented a series of queries to various departmental specialists in the Interstate Commerce Commission in 1927.

Here are the queries, and their answers:

Does the Interstate Commerce Commission keep record of the stockholders in each rail? — It cannot keep record of the daily shifts in a daily market; but it does keep record and publishes the twenty heaviest holders in each rail.

Does the Interstate Commerce Commission prevent one road buying control in another? — The Interstate Commerce Commission cannot prevent one road going in the open market and buying shares for sale in another road; but it can and does prevent the issuing of "inflated securities" and "watered stock" on the securities so bought.

Does the Commission control ship coastal traffic? — The Commission has no power to control coastal traffic.

Can any canal except Panama compete against rail rates? — Canals and rivers from their very natures can never compete against rails.

Do rebates still exist anywhere on American rails? — Rebates do not exist in the old form and are forbidden; but they do in special favors, and thousands of dollars are levied in fines every year for slight infractions in these favors.

Has the recapture clause of all revenue returns

over five and three-quarters per cent been proved legal? — It has not been proved legal yet.

Is the rail to be regarded as a public highway? — Absolutely not.

What control over motor buses and trucks competing with rails has the Commission? — No control.

Is the valuation of American rails yet complete? — Almost, and it exceeds the capital of American rails.

How about " watered stock " to promoters? — There is no " watered stock " in trunk lines to-day and wherever the Commission can detect it in combinations, the combinations are forbidden.

Is it permitted to issue equipment certificates, trust notes, etc., to replace rolling stock, when surpluses are concealed? — Equipment certificates can only be issued on permission of the Commission.

In consolidating new groups of rails, can an " inside ring " be prevented from loading one good rail with securities to buy worthless roads? — A new group cannot be prevented from buying other rails but it can be prevented from issuing securities at inflated values.

To what extent is " watered stock " now legal? — It can be stopped by the Commission wherever and whenever proved.

Can directors' property be made liable for rascality? — No, that comes under state law and is one of the things yet to be worked out without injustice to the innocent when punishing the guilty.

If these enlarged powers now in the hands of the Interstate Commerce Commission do not protect the investor, it is because he is too indolent or too uninformed to look up carefully the revenues, the debts, when these debts come due, the capital, of the rail in which he places his savings. It explains why all sound rails welcome the new Magna Charta of protection from rascality and why rail securities are to-day coming back to old-time favor.

I have often asked myself when reading Interstate Commerce Commission decisions on rates and consolidations: " Was the tail wagging the dog? " It seemed to be in certain cases, especially where reduced rates were forbidden; but on a careful rereading of many thousands of pages of evidence on which the verdict was given, I have concluded that " the tail was not wagging the dog," but it was sometimes wired down so it couldn't wag. One thing I did find out — whatever the condition of the dog's tail, its jaws were neither muzzled nor gagged. The headlines in the press might not report it; but wherever concealed tricks were dug out of the evidence, the dog uttered a growl that forced the tricksters to recede; and any investor can get these growls by writing to the Commission for carbon copies.

My next suggestion may seem so wildly impracticable that it will make the dog lie down in terror; but as a permanent protection to honest investors and honest rails, why not an investors' department to which any buyer of rail bonds or stocks could write *not for advice,* but for analysis of the assets and liabil-

ities of the rail he contemplates? Granted it would add to the expense of the Commission an outlay of a few hundred thousands a year — yes, even if it added a million. Wouldn't it save honest investors losses of hundreds of millions a year from prices jigged up and down in the market? The honest rails have nothing to fear. The dishonest rails would be put out of business. So would a lot of " get rich quick " manipulators and subsidized tipsters and shyster brokers playing a game of loaded dice on slim margins mostly supplied by misadvised investors. What the rails need more than anything else to-day is stable values founded on truth. The press can't get it. The Interstate Commerce Commission can; and what is more, it can be held responsible for what it gives out.

Chapter XXX
Last Thoughts

SUCH is the history of the steel rail for a century, which in race progress is a pin-point in eternity.

It is hard to realize that steel's flag of progress has led humanity farther in a hundred years than it had advanced before in six thousand years. If the lessons from the past have not been culled as the story unrolled, they could hardly be culled from a general summary.

Over human tools good and tools bad that flag has waved its long white folds — veritably and truly a pillar of cloud by day and a pillar of fire by night; but the point is — it went ahead.

The settlement of three-quarters of America would have been quite impossible without the steel rail. The prairie had neither fuel for heat nor lumber for building. Neither had it markets for produce, nor any way to get its products out to markets. In single individual states of the Middle West and the Far North to-day are dwelling in peace and plenty more people than there were native Indian races in constant raid and war throughout all America before the coming of the white man.

One way to realize the tremendous impetus to progress from the steel rail is to consider the old highways and the new. The great ancient highway was from Ur on the Persian Gulf up through Chaldea to the Mediterranean and Egypt. The great terminals on this highway were Babylon, Nineveh, Ephe-

sus, Damascus, Baalbek, Petra, Tyre, Alexandria, Memphis. The great commodity was grain — chiefly wheat and barley. When the camel caravans failed to reach their terminals, famine swept through empires. The camel load seldom exceeded three hundred to four hundred pounds. The camel caravans, even the conquering army caravans, seldom exceeded a few thousand. They could not. They would have devoured the pasturage down to the point of self-destruction and drained the shallow pools and deep wells across the desert zones lying between rivers. When we come on the vast ruins of theater and temple — which were half banks for the storage of gold and silver, and half shrines and schools and libraries for worship, education, and the deposit of tablet records in imperishable stones and burnt clays — we marvel at ancient structures, which must have housed fifty thousand people under one roof, or encircled the same number of people in an audience unroofed in a dry climate. To blame modern rails for the centralization of vast populations in small areas is hardly fair; for certainly the populations of both Babylon and Nineveh far exceeded any modern city — even London and New York combined. The ancient city had to concentrate its central hub inside walls forty feet high, wide enough at the top for eight chariots abreast; its suburbs running out two hundred miles. This concentration was the only safety in time of war; and ancient history never knew an era in which there was no war. We have only to get the measurements of the ancient city streets, barring the wide thoroughfare

on top of the walls and the main thoroughfares running out from the temples like spokes in a wheel, to realize how fearfully congested and unsanitary such city life must have been. Off the main thoroughfares, streets were crooked as a corkscrew to mislead and entrap intruders, and barely wide enough for a camel with its cargo. It is interesting, too, to recall how when the cargoes reached the terminals, payment was made by gold and silver weighed out with balances whose scale was a grain of wheat — whence we got our Troy weight of a grain of gold. The freight sheds, or exchanges, were, of course, the temples of traffic, whence the cargoes were distributed to royal storehouses, army arsenals, small merchant retailers. Silks, grain, carpets, jewels, gold, silver, ivory, copper, bronze, human slaves taken in war or raid — all came to the terminals for resale by auction or private barter; and the sin of short-weight scales was punishable by death, or death remitted on a fourfold payment with interest at twenty per cent. There was little the modern rascal has devised which the ancient tradesman did not attempt, though up to the present archeologists have dug up few jewels which show adulteration of precious metals or coins that fell to the value of modern worthless paper stocks.

For purposes of comparison we can now jump forward to the steel caravans of our own day.

The distances over the ancient highway and the modern transcontinentals and belt lines were not very different — each about two thousand miles north

and south, three thousand miles by the great bend up round the headwaters of the Euphrates, and then down through Canaan and across Suez and up the Nile through Egypt. A modern electric or steam engine can haul from one hundred to one hundred fifty cars down grade, or easily one hundred cars on level grade. Some can exceed forty tons, but we will put the average grain car at forty tons — that is eighty thousand pounds, the cargo of two hundred camels — or for the whole train twenty thousand to thirty thousand camels. The camel's greatest speed was eighty miles in twenty-four hours. The fast grain freight dashes forward at five hundred to six hundred miles in twenty-four hours. It renders famine impossible in any land where it runs. Where fifty thousand people daily passed through the main thoroughfares of ancient cities, there are two stations in New York City alone, where from two to three million people a day pass through the stations that are our great temples of traffic. In Washington, Philadelphia, Baltimore, Chicago, St. Paul, Winnipeg, Vancouver, are rail stations which are really temples of empire traffic, through whose portals pass vaster cargoes every year than ever entered the ancient cities in all their history. It is a curious throw-back to ancient ideals of beauty that in architecture all these modern terminals are more or less borrowed styles from Grecian and Egyptian types — the Corinthian fluted pillars surmounted by acanthus leaves, the portico effect between, the domed ceiling, the flat roof design, the painted or sculptured mythology, the niches for

figures of the great empire leaders of labor, industry, farm, mine, forest. In the frantic pace of modern life we may not grasp the meaning of all this; but as time goes on unrolling the pages, much of the beauty, much of the cosmic meaning will become part and parcel of our racial knowledge. The barter on our financial or grain exchanges exceeds in a single day the life wealth of a Solomon or a David, a Nebuchadnezzar or an Alexander. I do not say size is a blessing. It may be a curse. It may fall of its own proud altitude. But I do say the constant shuttle of rails has created a human expansion in thought, grasp, venture which was never before possible to humanity. Bad as our congested cave-city life may be, we have never yet been swept by the plagues which were the scourges of ancient life; and our narrowest gutters and alleys are models of sanitation compared to life in an ancient city. If you doubt this, look up the pictures of any great ancient city in India or Southern China.

What of labor, numbering one million six hundred thousand in the rank and file of rail workers, with double that number in the lumber, coal, steel industries, which purvey supplies to the rail? With engineers and conductors drawing salaries as large as the governors of the smaller states — which they should; with the chiefs of the Big Four unions drawing salaries equal to the presidents of the big rail companies, or for that matter equal to the President of the United States — which they should; I cannot see that rail

labor can be put in the slave class that constructed ancient highways.

If this record had been written ten years ago, it would have been necessary to chronicle the interminable strikes that made rail management a horror from 1870 down to 1900; but with the advent of big responsible rail labor leaders coming to the top of their own organizations, the strikes, the riots, the bloodshed, the lawlessness of the seventies, the eighties, and the nineties have passed. Labor presidents and rail presidents sit down together at a table and present demands and proposals and facts and figures, on which fair middle ground can be found, knowing full well that, if they fail to compromise fairly, the public will make short work of both. The public may not take hold of the rail and run it, though the public in England with its short rails did that after the war; but to replace one million six hundred thousand skilled rail workers in this country would be another story. It could not be done; but a remedy much more terrible to labor and capital could be used in America. Vast as is the mileage of steel rails in this country — from two hundred fifty to two hundred eighty-five thousand miles — far vaster is the mileage of the motor freight and bus public highways. It is so vast that I cannot give it. It cannot be computed. Certainly in New York and Pennsylvania and Texas and California alone the mileage usable by motor truck and bus far exceeds all the steel mileage in the United States. Rather than endure a coal or food famine for a single day resulting from a universal

rail strike, truck and bus on these highways could break a rail strike in twenty-four hours, to the utter ruin of union and rail finance. Labor and capital no longer pull against each other in the rail world. They are paired horses in one team pulling in the same direction for public service; and I do not think I am wrong in saying that the old foolish days of vicious strife between the two have passed. If labor forces its wage level higher than the shipper can stand, or capital forces its traffic charges higher than the shipper can stand — the public has the remedy in its own hands. Both sides know that. Peace has come out of the turmoil, and woe betide the leader who endangers that peace. He will ruin his own rail company, or his own rail union. We must not forget that to-day the public owns the rails; and among the owners of rails are tens of thousands of rail employees, who bought at par and below rail stocks which from sheer excellence of service now stand at 200. Do you think for a moment that the average sane rail man is going to imperil that property? If you do, you are simply a back number thinking in the atmosphere of antagonism that obscured sound balanced judgment in the eighties and nineties. Where rail wages averaged only seven hundred dollars over ten years ago, they now average over sixteen hundred. We are cutting out *hate* as a guide in life. We are also cutting out *dishwater platitudes* about brotherhood. Instead, we use facts for guides, or as near facts as we can dig out of experience; and God prosper the digging!

Can the motor bus and the motor truck ever supplant the rail? I believe the latest figures show that there is one freight car in use for every inhabitant in the United States. There is one motor capable of conveying five people in use for every five inhabitants in the land. These figures cannot be given definitely. They shift every year and every season. That looks as if the motor could and is supplanting the rail; but wait. Let us take facts again. For one class of motor traffic, the motor has decreased both passenger and freight rail traffic from twenty-two to thirty per cent in twenty years. That looks ominous for rail revenues; but examine facts again. At first it was thought the motor would utterly destroy suburban traffic. It didn't. Instead, it killed itself. In other words, in great cities the congestion of motors became so great that in rush hours of blocked traffic you could walk faster on the motor roofs (provided you could hop the space of the engine) than you could ride. The delayed suburbanite had to park his motor and go back to the steel rail. Then it was feared the big motor bus and truck would rob the long distance rail. It didn't. It added to its traffic by feeding in a thousand lateral streams, which the trunk line could not tap. It revived hundreds of little New England back-road towns, which had been dead for twenty years. Obviously trunk lines can't run round back roads, any more than motors can haul heavy loads up and down hills slippery with ice, which the powerful steel rail engine can accomplish either by spiral tunnel or by sheer pulling power. The Cascades and Rockies

furnish hundreds of examples of this. So do New England hills in winter and in sleety spring. Besides, the motor with its twenty million rubber tires and gasoline and steel equipment gives to the railroad carrier an enormous freight in its own requirements. So, short distance and long distance, the motor is helping the rail more than it is hurting it. Where, then, does the decrease of twenty-two to thirty per cent in rail traffic come in? In the hundred-mile zone — the local freight, the local passenger. Does that hurt the rail? Very little, if any, when you balance the number of motors carried by rails and all their parts in replacement, steel, oil, leather, upholstery. If there is one type of freight and passenger traffic which the rail man detests, it is the short local stuff. Except for the brief holiday season in summer and for the peak days in that season — Fridays to Mondays — trains have often to be run with a crew of eleven, on which may travel one, two, perhaps only six passengers, and those between local stations. Of course, such trains do not and cannot pay. I could give an example of such local traffic in the Northwest where six trains a day shuttled in and out on each of two competing railroads; and except for the holiday season, often had only five to six passengers. The trains reduced their service to one train a day. Even then, the passengers carried fell to *one* for some days. The rails then took their trains off completely and put on buses of their own. A terrible howl went up from the little local towns. They were being " passed," " neglected," " junked," " ruined." The rails invited the little town

boards of trade to come in and meet them. They laid the actual traffic record for a year before them and said they would be glad to publish the figures. The boards of trade retreated looking worth about fifteen cents. They didn't want such figures published. Their day as small traffic centers had passed and they had to accept the fact and not curse the rail. The motor had done it.

Is then the story of rails told? As empire builders, yes; as servants of those empires, no. Rails are as living and organic as human life or vegetable growth. They can prosper only as the communities they serve prosper, and their empires can prosper only as the rails prosper. The well-being of one is bound up with the well-being of the other; and neither can be hurt without hurting the other.

What of the future? Who can say? What of the false prophets during a century, who said " to talk of a speed of fifteen miles an hour was madness," and called Whitney a dreamer, and Holliday " an old fool," and tried to race coach horses and pony expresses against steel? What magic scientific inventions may work for rails in the next century, what seer can foretell?

I only know that if we ponder well the lessons of the past and take good care of the present, the future will take care of itself and the white flag of progress lead *whither it must;* and in that faith one must rest, an unshakable optimist.

LOS ANGELES MUSEUM
EXPOSITION PARK

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